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An M-4 Tank of an American Armored Division bumps up the road to Gabes.

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the TUNISIAN Cam

by Major G. R. De Beer
British Army

THE Tunisian campaign is an example of a successfully accomplished plan for the annihilation of the enemy's forces. The plan provided for: first, the approach and build-up of Allied forces; second, the engagement of the enemy; and third, the assault and annihilation of his forces.

Allied Approach and Build-up

The approach involved two major operations. From the east the Eighth Army, having administered a crushing defeat to the enemy at El Alamein in early November, 1942, set out as rapidly as supply considerations and communications permitted on the 1,500-mile advance

British

One of the vast armad of transport ships i Algiers harbor unload troops and stores.

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Tanks, landed at Oran, are quickly assembled and rushed to fighting British and American troops on the Tunisian front. Technical work on the tanks is supervised by a civilian Diesel engine specialist.

paign

to the Tunisian frontier. The capture (January 23, 1943) and organization of the port of Tripoli was of first rate importance in this operation, since it enabled the conveyance of troops and supplies by sea, and endowed the Eighth Army with striking power far greater than that which the enemy estimated possible in the time.

From the west, the plan of approach involved the assembly of forces in America and Great Britain, their convoy over thousands of miles of ocean, their landings in Morocco and Algeria against the resistance of the Vichy French, overcoming that resistance, and finally organizing communications to the east from their landing points. Here again, timing, objectives, and magnitude of Allied operations took the enemy completely by surprise.

Landings in northwest Africa were made at dawn on November 8, 1942, by three task forces; by United States troops in Morocco at Mehdia, Fedala, and Safi; by United States troops in Oran in Algeria, and by combined United States and British troops in Algiers.

Resistance by Vichy troops was stubborn but rapidly overcome, and on November 11th the local French rallied to the Allied cause.

The fact that Allied troops had to anticipate prolonged opposition played an important part in subsequent operations, for it meant that transports had to be loaded "tactically." In the case of the western landings by United States troops, the first assault part, with a minimum of fighting vehicles, was followed by the main body of troops who were to secure the extended bridgehead. Administrative personnel and all transport etc. had to follow later. In spite of the speedy collapse of Vichy resistance, communications between the Atlantic ports and the eventual fighting front in Tunisia were so long and difficult that the Allied forces were for a long time virtually immobilized. Assault forces that landed at the eastern ports were followed by their appropriate transports, then antiaircraft and administrative personnel. Transport for the whole army did not follow immediately, as the main body of troops was not scheduled to land until a later date.

Balancing metal landing mats on their heads, native laborers help American Army engineers to build a mile-long metal runway at an airport on the West Coast of Africa, near Dakar. Construction of the airport began shortly after the United Nations had occupied the naval base.

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American Armored Forces at front line observation post prepare for the successful counterattack at Kasserine Pass.

On November 11th, therefore, General Eisenhower was faced with the question of whether to advance eastwards to Tunisia with the Allied forces immediately available or wait until the Allied forces, and in particular the British First Army, had time to build up their strength. He rightly decided in favor of the former alternative, and the 400-mile advance to Tunisia began immediately, despite the facts that the forces available in Algiers amounted to little more than one division, that the rail and road communications were very poor, that sea communications along the Algerian coast were subject to enemy air and submarine attack, and that serviceable airfields would have to be improvised from scratch as and when the Allies advanced.

Meanwhile, the enemy lost no time in flying and shipping forces across the 100-mile wide Sicilian Straits to Tunisia at the rate of about 1,000 men daily, until towards the end of November they had assembled 20,000 men and some tanks. Tunis and Bizerte had good harbors and excellent airfields and, further, could rely on bomber support from permanent bases in Sicily.

Engagement

Contact with the enemy in the hills of northern Tunisia was made about November 15th, and the active operations began. These operations may be divided into four phases: first, the Allies' initial rush to Tunis; second, the enemy's reaction and offensive operations; third, the storming of the Mareth and Akarit position by the Eighth Army; and fourth, the Allies' final offensive. (See map, page 6.)

The Allies' advance into Tunisia from Algeria had as objects: an attempt to carry Tunis by rush tactics before the enemy became too strong; or failing this, to secure positions from which the final assault could ultimately be launched. An additional object was the support of those French troops who had refused to obey Vichy's orders and were valiantly resisting the enemy with the feeble means at their disposal.

By the end of November, United States and British troops had reached points midway between Tunis and Bizerte, but were unable to proceed. The forces that the enemy had been able to concentrate were too strong for the relatively small Allied force opposing them. The phenomenally bad weather and mud had also interfered with the improvisation of airfields and consequent operations of the Allied air forces in support of their ground troops, so the latter had to fall back. They had, however, secured Medjez El Bab, an essential jumping off ground for any subsequent assault on Tunis, and they had rallied French troops and stabilized the front.

The enemy's reaction to the advance of the First Army (still less than two divisions in strength, including advanced echelons of certain United States formations) took the form of a succession of offensive thrusts. The enemy forces consisted of the German Fifth Panzer Army under General Von Arnim, headquarters in Tunis, which was being built up to the strength of four infantry divisions and an armored division; and the Italian First Panzer Army, under Marshal Rommel, stationed in the Mareth position and consisting of the German Afrika Korps, two German infantry and two armored divisions, and two Italian corps.

Five main enemy attacks were launched between mid-December and early March. The first was launched in December against Medjez El Bab with the object of recapturing that strong point. The second was directed in mid-January against the French in the Ousseltia sector in the hope of defeating the poorly equipped French forces. The third, in mid-February, was made against American forces in the Gafsa sector in an effort to widen the coastal corridor of communication between Von Arnim's and Rommel's armies and capture Tebessa, which would threaten the flank of the entire First Army. The fourth attack was launched against British forces in Northern Tunisia in late February with the object of overrunning what the enemy hoped would be the rearguard of the First Army, menaced in the flank from Tebessa. The fifth and last major enemy counteroffensive was launched in early March against the British Eighth Army in Medenine in an attempt to spoil the Eighth Army's preparations for attack on the Mareth Line.

One and all, these offensive thrusts failed. Medjez El Bab was held by the First Army; the French were pushed back but were unbroken; the enemy failed to reach Tebessa and soon had to relinquish the temporary gains at Sbeitla, Kasserine and Gafsa; the attack on the First Army made only slight, slow, and costly progress in the extreme north without forcing the Allies to relinquish their position at Medjez El Bab or Beja; while

the attack on Medenine resulted in nothing but a loss by the enemy of fifty-two tanks.

On February 20th, under the supreme command of General Eisenhower, the Allied Eighteenth Army Group was set up under the command of General Alexander. This comprised the British First and Eighth Armies, the United States Second Corps, and French forces organized into the Nineteenth Corps. Allied Air Forces were likewise reorganized. Responsible to General Eisenhower, Air Vice Marshal Tedder became Air Commander-in-Chief in the Mediterranean. Under him, Air Vice Marshal Coningham was in charge of air operations in support of the Eighteenth Army Group. Also acting under General Eisenhower, Admiral of the Fleet Sir Andrew Cunningham commanded all naval operations in the Mediterranean. Thus, all British, United States and French forces in the African theater were organized into united ground, air, and sea forces, with the individual commanders of each subordinated to one supreme command.

Allied Offensive

The first step of the combined Allied offensive was the attack on the Mareth Line. By March 18th, the United States Second Corps reoccupied Gafsa. The object was, first, to menace the Italian First Panzer Army (now under General Messe) in the rear and to draw off as much of its armor as possible; and second, to guard supply dumps for the Eighth Army that had been accumulated at Gafsa.

The Eighth Army attacked Mareth positions on March 21st by frontal assault on the sector near the sea, and a turning movement was directed on El Hamma on the enemy's right. The frontal assault crossed Wadi Zigzau and the antitank trench, and formed a bridgehead, but it proved impossible to bring up the necessary heavy weapons to repel the enemy's armored counterattack. The weight of the British attack, therefore, was shifted to the left flank, and on March 26th, after the assault by the New Zealand division had gained its objectives, the British First Armored Division passed through and reached El Hamma, which fell to it the following day, when Gabes also was occupied. The enemy had been driven out of the Mareth positions.

Meanwhile, to the east of Gafsa Allied forces had had to withstand heavy enemy attacks which were repelled, and on April 5th, the Eighth Army burst through the enemy's position at Akarit by frontal assault. The First Army likewise broke through the enemy's flank guard at Fondouk on April 10th, and the enemy was now in full retreat to his strong prepared perimeter positions, covering Tunis and Bizerte along the line from Enfidaville through Pont du Fahs to Goubellat and the high ground north and west of Medjez El Bab and west of Bizerte.

The two enemy armies had been driven together, but the Eighteenth Army Group had also joined up to form a continuous front of about 110 miles.

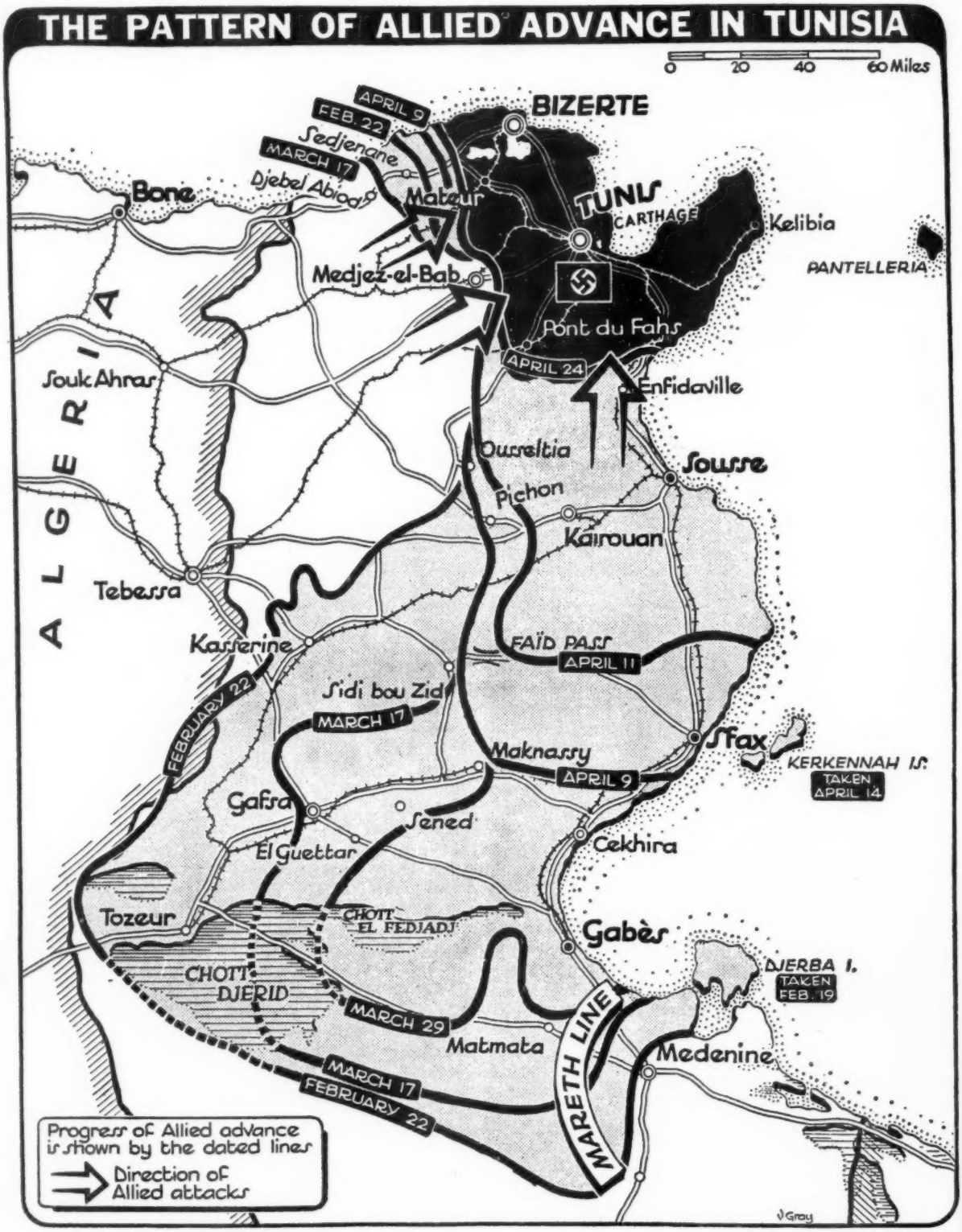
At this stage, General Alexander made the following dispositions. The United States Second Corps moved right across the lines of communication of the First Army to the extreme north of the Allied lines. This move was accomplished with such skill of staff work and execution that although heavy streams of traffic were crossing one another at right angles, it went off perfectly. In their new positions, the United States Second Corps was to press eastwards from Sedjenane and Beja in the direction of Mateur and Bizerte. The Eighth Army was directed to attack the enemy positions near Enfidaville to pin down forces in this area, after which the First Army would launch an attack eastwards along the Bou Arada-Medjez sector.

Accordingly, the Eighth Army attacked on April 19th and after very severe fighting, occupied the objectives. The First Army (reinforced by the First Armored Division from the Eighth Army) attacked April 22nd and 23rd. For the ensuing ten days the First Army sector was the scene of furious fighting. Counterattacks succeeded one another day after day and neither side made much headway. But by May 3rd, the United States forces, by dint of hard fighting, had driven the enemy out of Mateur, and the enemy showed signs of withdrawing the northern sector of his perimeter to reinforce the center. On May 5th, the First Army captured Djebel Bou Aoukaz, a key position on the way from Medjez to Tunis, and the following day the final assault was launched.

Taking advantage of the fact that the enemy still maintained the bulk of the Italian First Panzer Army in the south, where indeed his general staff still thought that the greatest danger lay, General Alexander had transferred the Seventh Armored Division and Indian

Infantry of the British First Army rests against a craggy crest above Kelbine after they had taken the height. This was one of the last heights before Tunis.

British Official Photo



Fourth Division from that sector to Medjez El Bab.

Allied mastery in the air was now complete. After intense bombardment of the enemy's forward positions and lines of communication both from the air and by artillery preparation, the British Fourth and Indian Fourth Divisions attacked due east from Medjez El Bab on May 6th. After overcoming the enemy's resistance the British Sixth and Seventh Armored Divisions passed through the gap, and by May 7th they had cut clean through the enemy's defenses and entered Tunis.

The same day the U. S. II Corps stormed into Bizerte.

With these two blows the enemy's main defense

formations were broken down, his forces cut in two, and all those between Tunis and Bizerte were forced to surrender. But the enemy still had a possibility of establishing a restricted perimeter defense line from Hamam Lif on the coast, southeast of Tunis through Zaghouan to the heights north of Enfidaville. In these naturally strong formations, the enemy could have drawn supplies from dumps in the Cape Bon peninsula and replenished them by means of landing jetties which he had established at Kelibia. This contingency had been foreseen by General Alexander and provided for. No sooner had the Sixth Armored Division secured Tunis than it turned southeast and blasted its way through enemy resistance at Hamam Lif, cut right along the base of the Cape Bon peninsula to Hammamet and beyond, and linked up with the Eighth Army in the coastal sector on May 11th. The remaining enemy forces were thereby encircled and cut off from supplies. General Von Arnim was captured near Sainte Marie du Zit on May 12th, and the following day Marshal Messe, with the rest of the enemy forces still intact in their formation, surrendered unconditionally.

The Tunisian campaign lost the enemy 290,000 prisoners and 50,000 killed, more than 250 tanks, 1,000 guns, including thousands of tons of supplies, 1,700 aircraft shot down and 630 captured on the ground, 137 ships sunk by the Allied Naval forces, and 95 by air action certain, with many more probable.

Such was the well-earned record of the Allies grand strategy, efficient planning, excellent war matériel, indomitable fighting spirit, perfect inter-Allied coöperation of all services, and superb generalship.

British Official Photo

Right: **General von Arnim, Commander of Axis forces in Tunisia is shown as he steps out of a car to surrender to the Allied command.**

Below; **American MP's check in the German and Italian prisoners as they arrive at a prison camp behind Bizerte.**

European

U. S. Soldiers in Tunisia

Press Assn.

An American artillery unit files up a hill in the El Guetar Valley in Tunisia to join their comrades who have established an observation post on the crest.

An antitank crew mans a gun in the extreme forefront of the American Line.

A tank destroyer unit shielded by the crest of a hillside, await the word to go into action against the 10th Panzer Division.

Press Assn.

Realistic maneuvers, such as shown in this picture, preceded actual combat. An American half-track (center) crossing a stream is caught between bomb bursts. At left is an amphibious jeep. At right, partly concealed by grass and bushes is a radio jeep.

Press Assn.

During an Allied raid on German-Italian positions in Sened, this U. S. half-track, mounting a heavy gun, and the speedy jeep in the foreground, proved tough and mobile.

Press Assn.

Press Assn.

Infantrymen familiarize themselves with a 75mm Italian field gun, captured in action on the Tunisian front. The gun was later used to knock out a German Mark III tank.

Press Assn.

Infantrymen and armored vehicles advance over hilly terrain during their thrust for Bir Marbott Pass, on the way to Gabes. Artillery fire sweeps the ridges ahead.

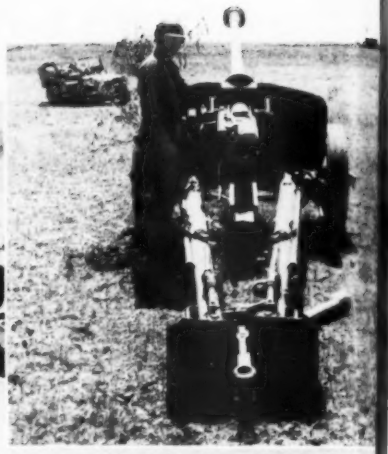
German Tanks and Captured

(Pictures by

Right: Side view of German Mark VI or "Tiger" tank.

Below: Front view.

Towed 50mm AT gun.



Towed 75mm AT gun with muzzle brake.

TANKS IN TUNISIA

ANY discussion of our campaign in Tunisia, from November 8, 1942, to May 9, 1943, must lead eventually to a discussion of tanks, since both the Axis and the United Nations used them extensively.

The U. S. 1st Armored Division, affectionately known as "Old Ironsides," is the only U. S. armored division to have seen extensive combat so far in this war. It furnished combat teams for the initial landings in Algeria and the November push into Tunisia, elements of which reached the 12 kilometer post on the road to Tunis before German armor forced them to retire. Later, in the dark days commencing February 14th, the 1st Armored Division bore the brunt of the German panzer attack through Faid Pass, which finally bogged down in the Kasserine Pass Elements of the 10th, 15th, and 21st Panzer Divisions were reported in action against it, in this last great drive by Field Marshal Rommel's troops to gain elbow room.

Finally, "Old Ironsides" furnished the break-through south of Bizerte which ended on May 9th with the surrender of the Axis forces north of Tunis, and the disintegration of Axis resistance in North Africa.

It is not the purpose of this article to discuss the strategy and the tactics of the various armies and their components, except as they may bear on the lessons learned during the six months of this campaign. A prominent and successful British commander remarked to me once that he did not consider an officer's training complete until he had experienced defeat. The author feels no twinge of shame in stating that we of the "Bloody First" have tasted to the dregs both defeat and victory, and it is hoped that our experiences may be the source from which other American armored divisions may draw the lessons that will enable them to succeed, without having to retrace our painful steps.

In drawing conclusions from the following lessons, it must be remembered that there will probably be many extensive changes in methods of future employment.

Reconnaissance

In our training areas and in our schools, great emphasis has been placed on reconnaissance, yet it is apparent that we have not yet mastered the subject. All too often our reconnaissance elements knew the subject as taught in a company or regimental school or as practiced on maneuvers, but they were not sufficiently well grounded in details of application to adjust themselves, effectively, to strange terrain and circumstances.

Antitank Guns in Tunisia

the Author)

PzKw38t (1938 Czech tank chassis) with F K.36R—the Russian M1936 high-velocity 76.2mm field gun.

Towed 50mm AT gun.

mm Flak 30 hastily abandoned.

Colonel Peter C. Hains III and his executive officer, Lt. Colonel Louis V. Hightower, near Tebessa.

by Colonel

*Peter C. Hains III, Cavalry**

All reconnaissance agencies must master such details as the proper method of establishing and conducting listening posts at night, observation posts in daylight, and night patrols dismounted and mounted. They must learn how to observe properly, how to identify and describe what they have seen, how to plan their reconnaissance, how to locate hostile guns, and how to detect and mark or remove mines. There are innumerable other details that must be practiced until they become second nature.

Reconnaissance on the battlefield is not alone the responsibility of the reconnaissance elements. Every soldier must be alert at all times to the nature and possibilities of the terrain, the weather, the sun, the enemy's activities, and the disposition of friendly troops in his vicinity. Combat troops must have "eyes in the back of their heads and necks like an owl."

At Faid, German tank commanders were seen observing through glasses for minutes that grew into hours. No movement was made until a thorough, careful, visual reconnaissance had been completed. Every next move was studied in detail and so carefully planned that when made, it was always to a selected, defiladed position from which the tank could fight, or within which it could hide.

At Sbeitla, ten Mark VI Tigers moved rapidly and boldly into a wadi. There they disappeared from sight. An hour later the muzzles of their 88's pushed over the bank and opened devastating fire.

On February 16th, German tanks advanced across open terrain against Djebel Hambra. The advance was painfully slow. When taken under fire, they disappeared in defilade or halted their advance until further reconnaissance revealed the secure position they sought. Throughout the day, the German tanks, keeping just outside of the effective range of our guns, maneuvered, until at 16:00 hours they felt prepared for the attack. During the entire day their reconnaissance was thorough, careful, and continuous. At no time could they have been taken by surprise and counterattacked.

At about 14:00 hours on February 14th, tanks moving east toward Sidi Bou Zid were observed from our

*Colonel Hains commanded a regiment of the 1st Armored Division throughout the entire campaign in Tunisia.

artillery positions. They were barely visible from the battery position. Knowing the dispositions and numbers of our own tanks, however, it was realized that these were probably not friendly. Prompt reconnaissance revealed an attempted envelopment by 15 German tanks. Again the next day, an S-3 became suspicious of what appeared to be half tracks moving east. Careful observation of this movement caused the discovery of a German tank attack, out of the sun, toward the flank and rear of our infantry.

The lessons are clear. All ranks must be keenly alert. No soldier can assume that he will have to perform only his assigned job well. He must realize that in battle every member of the fighting team will be called on to perform a wide variety of tasks. He is in a never-ceasing struggle for existence, in which his constant aim is the destruction of his adversary.

Indirect Fire

With the ever increasing effectiveness of the antitank defense, the tank must be considered more and more to be an armored, mobile gun platform, capable of rapid, crushing, powerful thrusts when conditions warrant. It is also capable of delivering destructive fire from defiladed positions by indirect fire methods.

Reduced to a last analysis, tanks, like bombers, are a form of artillery—another means of bringing destructive fire power to bear on the hostile forces.

The conception of using indirect fire from tanks is not new. The German used his tanks in groups or batteries as artillery, and especially at El Guettar and Maknassy he used them as roving guns in support of his infantry. At Djebel Nemia, Mark IIIs and Mark IVs climbed into the defiles and attacked our infantry. We countered this form of tank employment by using more tanks on similar missions. They remained in the front lines with the infantry day and night.

Destroyers and antitank guns, being vulnerable to small arms and shell fire, could not accomplish the task as well as the completely armored weapon.

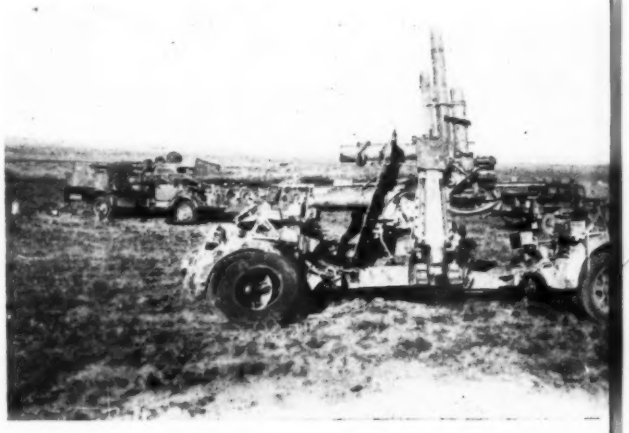
Thanks to the foresight of the division commander, Major General Orlando Ward, our medium tanks were equipped with quadrants and M. 1917 MG panoramic sights. The crews were well trained in indirect fire, and even after we lost our equipment, they used improvised methods to fire indirectly.

During the period commencing January 29th, platoons and even companies fired against targets in Faid by using a forward observer and indirect fire. The Germans had a pair of 210mm howitzers that so harassed our artillery that the crews were forced into foxholes. The American tanks, however, would advance to within effective range, and by using dispersion instead of concealment, they would take on targets such as located antitank guns, motor parks, dumps, vehicles and other targets of opportunity. "Jerry" would reply with his 210s, and often a company of tanks would disappear in smoke, but when the smoke cleared, there they would be—unhurt and still firing with as many as sixteen guns.

Once, when the hits seemed to be getting too close, the officer firing was advised that he had better move his company out of range. His reply typified the feeling of his men, "They have to get a direct hit to hurt us, and they haven't been able to do that yet. Watch this one!" Then his company fired a salvo out of the smoke and hit an ammunition dump in Faid.

Later in February, a group of nine "assorted" medium tanks were led into the mountain north of Sbeitla. Then, by using such crude methods as, "so many turns on the hand wheel," they fired against the flank of the German attack. So effective were they, that our artillery received frequent counter battery fire. The Germans never located the tanks, which continued their fire mission until their H.E. ammunition was expended.

Much stress should be placed on the importance of training all personnel to be forward observers. In the training of the 1st Armored Division great emphasis had been placed on teaching crew and squad leaders to adjust artillery or assault gun fires by simple methods. Our rule in Tunisia was: Whoever can see the target and get near a radio, should be able to adjust fire. He had only to call for a round of smoke near a prominent landmark, and then report, "The burst is so many yards north, south, east or west of the target."



Two 88mm AA-AT guns—one at maximum elevation, the other sited horizontal.

Frequently, a doughboy or a tank commander would put the gun on the target in three or four rounds, and our Artillery Fire Direction Center would then bring one or two battalions of artillery in on the target with devastating effect. Natuarlly, the artillery forward observer was used in preference to the others, but sometimes the F.O. was pinned down by hostile fire or was not in a position to see a particular target. As a result of this system and an excellent fire direction center, we never lacked for supporting fires. We often wished for guns with greater range, but within the range limit of our guns, our observer system gave us a perfect team.

Tanks in Support of Infantry—Hill 609

Commanders of tank units must keep an open flexible mind. Too often the situation demands the employment of armor in a rôle totally different from the normal school of thought.

In April, one of my medium battalions was in division reserve near Beja. The 34th and 1st Infantry Divisions had been battling for days in a fortress-like range of mountains against crack, determined, German infantry. Losses were running high, and progress was slow. One particular terrain feature, known as Hill 609 and held by the Germans, was the key to the hostile position. It was imperative that we take this hill. The face of the hill was abrupt rim-rock.

On April 29th, the tank battalion commander received orders to alert one company and have the company commander report to the commanding general of the 34th Infantry Division. Following is an excerpt from the report of the battalion commander:

"We found General Ryder at a forward O.P. from which he could plainly see the hill, held by the enemy, which was holding up his advance. (Hill 609.) He explained the situation fully and pointed out accurately on the map and on the ground, the locations of his own and the enemy troops.

"He gave the tank commander his mission and stated that his own infantry would support the tanks in driving the enemy from the hill.

"The tank officers then went forward to the friendly infantry positions and made a deliberate and thorough study of the terrain. Their plan was submitted to General Ryder, who assembled his artillery and infantry commanders to coördinate the details. The smallest details were worked out—from the construction of a wadi crossing to the identification signals to be used. After agreeing on the time of attack, Captain Gwinn and his officers returned to their company and explained to the men the plans of the operation in detail."

Here is Captain Gwinn's own story of the battle that followed:

"April 30th—Company X, X Armored Regiment arrived at an assembly area behind Djebel el Kerh at 02:30 hours. In order to get to our defiladed positions, we had to descend a very steep hill, cross-country, and cross a wadi at the bottom. This would have been difficult but 'Jerry' obligingly shot a flare which made our task easier.

"We got into our defiladed assembly area, arranged a stand-to for 04:00 hours, and then the men got some sleep. At 04:15 hours we jumped off after contacting our supporting infantry. Lieutenant Adams was to move the 1st Platoon forward and gain a position on a rim-rock to the company's left, from which he could cover by fire the entire operation of the company. On reaching the vicinity of his objective, he found it was inaccessible, so he moved his platoon to an alternate position, where he covered our advance.

"The other two platoons then advanced rapidly—leap-frogging as they neared the objective. Quite near Hill 609 the terrain narrowed, so that there was maneuver room for only one platoon. Lieutenant Riggsby led the 2d Platoon into a defiladed position, while Lieutenant Ruppert continued the forward advance with the 3d Platoon. Thus, although the entire company was under rather heavy fire, Lieutenant Ruppert was protected on both flanks from hostile tank counterattack.

"The infantry advanced with our tanks and on many occasions tried to designate targets. The noise, however, made this almost impossible.

"The C.P. was just forward of the 1st Platoon and came under direct antitank fire from the right. Before any damage was done, Lieutenant Adams located the gun, a ground-mount 75mm, and knocked it out by fire from his own tank. The 2d Platoon ran into difficulties, and Lieutenant Riggsby's tank was knocked out. Platoon Sergeant Neal then took charge of the platoon and covered Lieutenant Ruppert. At this time, one of the 3d Platoon tanks, that of Sergeant Kaschak, was knocked out and set afire by a 50mm antitank gun which scored five penetrations out of six rounds, at about 300 yards.

"Lieutenant Ruppert withdrew his remaining three tanks about ten yards to a defiladed position, from which he continued to fire on enemy infantry and guns withdrawing to his front and right front. His further advance was denied by hostile antitank fire from his right flank. The mission, however, was accomplished as our infantry came forward and took possession of the hill and we were ordered to withdraw to our assembly area.

"Our losses were two tanks completely inoperative,

and two tanks which were repaired and put back into operation a few days later."

It is worthy of note that when his tank was knocked out, Lieutenant Riggsby remained in his tank and, firing until his ammunition was exhausted, materially assisted the advance of the other tanks and infantry.

The attack started at first light and by 09:30 hours, the tanks had reached their objective. Because of the hill's rim-rock faces, some twenty feet in height in places, the summit of Hill 609 was inaccessible for tanks, but they beat down the hostile automatic weapons fire and allowed the infantry to close with the enemy on the objective.

The attack on Company X against Hill 609 is an example of the completely successful employment of tanks in support of infantry. Neither the tanks nor the infantry had had previous experience in this type of action, nor had they operated together before. Success was due primarily to three things:

First—Complete, careful, and thorough reconnaissance was made prior to planning the operation.

Second—Surprise was obtained because movement was made during darkness, and because the terrain was so unsuited to the employment of tanks.

Third—There was complete coöperation between the tanks and the infantry.

Enemy Antitank Defense

Every tank commander should make an intensive study of antitank methods. Only by knowing them, can he hope to outwit or outmaneuver them.

The German is adept at antitank defense. His guns vary in caliber from 47mm to 88mm, with the squeeze bore 20mm as a valuable "side kick." They are all characterized by high muzzle velocity, great range, and a low silhouette. The German is a master at concealment and invariably digs his guns in, often in almost conspicuous places. However, they are very hard to locate, and their muzzle flash is negligible.

Guns are employed in depth in antitank areas and are mutually supporting. Many are sited to cover reverse slopes and to fire at tanks that have passed. Be wary of the gun that opens fire. Look for the supporting guns that will take you in flank and rear, as you attempt to maneuver against the located gun.

A favorite German trick is to fire with several calibers at the same instant, in order to confuse the observer as to range and location. Another trick is to adjust with a 47mm gun and switch to an 88mm to fire for effect.

Each antitank gun seems to have a special detail who dig the gun in. Many alternate positions are used, and after firing from one the gun is promptly moved. This increases the difficulty of locating it and gives the impression that there are more guns than are actually present. I have seen one gun fire from three different locations on about a 500-yard front. We were unable to locate it until our infantry got close enough to discover the defiladed routes it was using in moving to its various positions. It had created the impression that at least two and possibly four guns were firing.

Before attacking an antitank area, the guns must be made to open fire and disclose their location. This will require a reconnaissance in force, for antitank guns will not open up unless forced to do so.

Just such a procedure was followed in the attack against the German positions east of Mateur. The reconnaissance in force cost eighteen tanks, but the locations of the antitank defenses were so accurately plotted that in the attack only one tank was lost, and that one ran over a mine. A heavy smoke screen was placed and maintained on the antitank guns on the south flank, so that their fire was ineffective. The remainder were neutralized with time fire. Tanks advanced into the fringes of their own artillery barrage and took over the neutralization. Then the artillery shifted its fires to the next ridge and close-support infantry took over.

This method repeatedly drove the Germans from their defenses, and many guns were captured because the crews were unable to remove them. Actions of this type required additional artillery. By using indirect fire, tanks in reserve can be used to augment the artillery.

Air Power

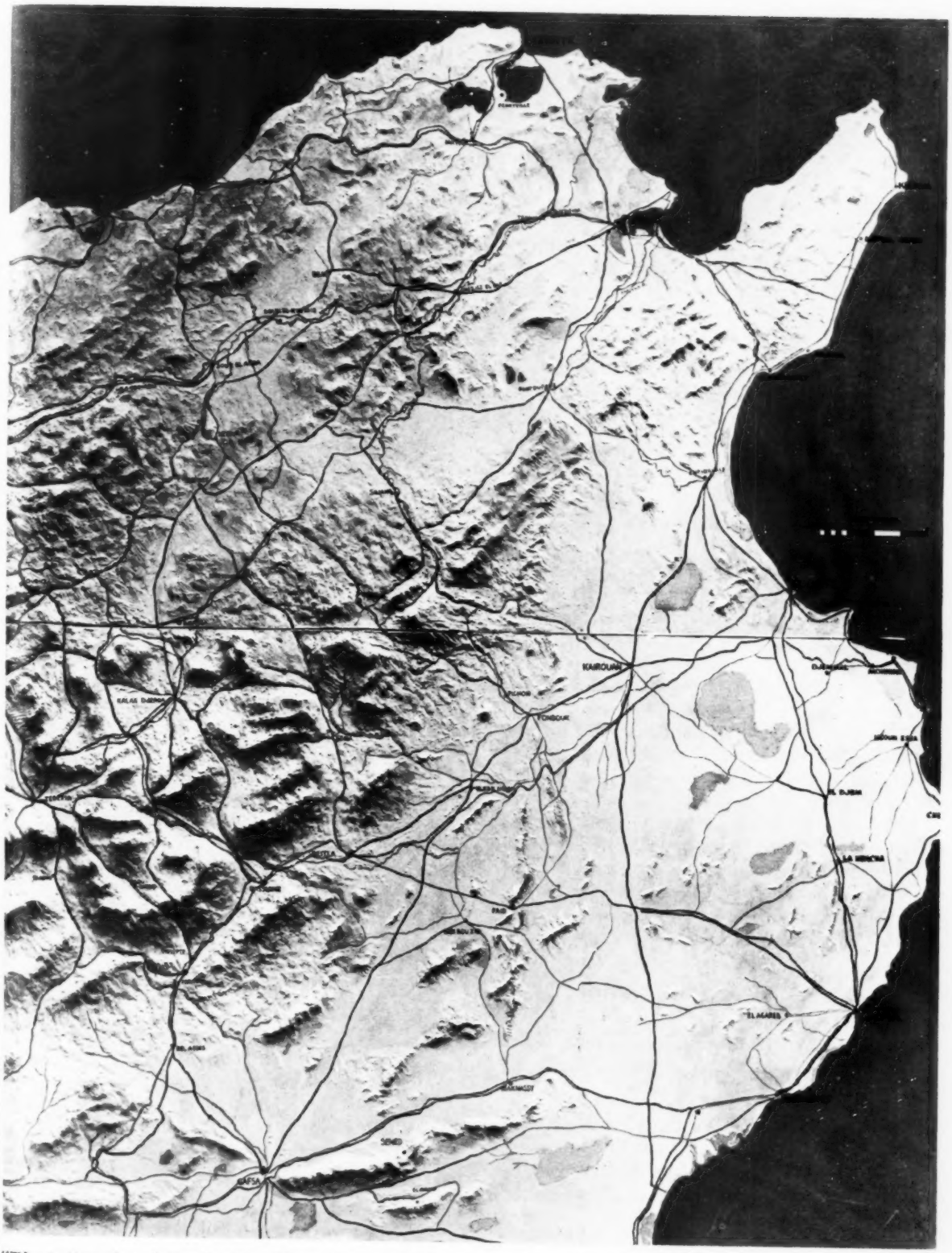
No discussion of present day warfare is complete without reference to the effects of air power. In the early part of the campaign, we received much attention from the German air force; but in the latter part, our own air force practically drove them from the sky.

The immediate effect of the German air attacks was to teach us to use dispersion, and we required not less than two hundred yards between vehicles, whether on the march or in bivouac. Since estimates of time and space are seriously affected by dispersion, it is essential that our troops train with the dispersion to be employed. It is too late to wait until in combat.

Other than attached antiaircraft, we depended on our .50 caliber machine guns to keep the "Jerries" up and found this very effective. Stukas will dive to within 50 to 100 feet of their targets and drop eggs in your hat, if you do not fight back. But a determined use of antiaircraft weapons will cause them to unload above 1,000 feet—and they proved very inaccurate under those circumstances. Our tanks were repeatedly the targets for Nazi bombers, but their attacks were mostly ineffective.

The airplane had a definite effect on our stowage problems too. After our first fight we removed everything from inside the tank except fuel, rations, water and ammunition. Since a deck load would be cut to ribbons and often set on fire by strafing and artillery, we left our musette bags and rolls in the assembly area to be brought along with the combat train.

The effect of air attack was principally psychological, and after the troops learned how to combat it, this effect was greatly reduced.



"The pattern for victory is clear. If we had set the stage we could not have provided a more shapely defined picture than that offered by the battle of Tunisia. There we had a perfect example of coördinated leadership for Allied action; an assemblage of overwhelming military power—air, land and sea; and the explosive effect of the skilful application of that power."—GENERAL GEORGE C. MARSHALL, Chief of Staff of the United States Army.

A Reconnaissance Squadron in Tunisia

*by Captain Jack H. Ficklen, Cavalry**

April 18:

"X" Squadron, now assigned to the 9th Infantry Division, performed combat missions east of Abiod. We relieved "A" Infantry Regiment occupying defensive positions and observation posts on Djebel Tabouna and low hills to the front thereof.

April 19:

The Squadron was disposed along a general NW-SE line in a zone 10 miles wide, with "A" Infantry Regiment on our left and "B" Infantry Regiment on our right. All these initial dispositions were a distance of approximately 29 miles west of Mateur, a strongly fortified German key point.

April 20-22 Inclusive:

(a) We established observation posts to the east in the vicinity of Melloul and Rhanem.

(b) Day and night mounted and dismounted patrols were made as far as 5 miles to the east of original N-S line as above.

(c) Road patrol from Amara to Aussif. Removed many teller mines thereon.

(d) A great number of mortar battery fire. Missions on north and south flank. Discovered German forward observation posts and artillery positions which were well camouflaged and thoroughly dug in.

During all of above operations, all elements of the Squadron were under frequent artillery fire. All forward elements were under frequent small arms and mortar fire from concealed German positions along a general N-S line in the mountains approximately 16 miles west of Mateur.

April 23-29 Inclusive:

A general attack by all units of the II Corps commenced at 05:30 hours on April 23. The Squadron was still covering a 10-mile wide zone between the 1st and 9th Infantry Divisions.

April 30-May 2 Inclusive:

During these four days the most stubborn enemy resistance was encountered by the Squadron from the same strongly dug-in and fortified German positions. All movements at this time were dismounted, and small arms contact was constant day and night. The Squadron suffered some casualties. We asked for and received our first artillery support during these four days of vigorous attack and resultant determined enemy resistance. It has since come to light that the Squadron was facing a reinforced strongly fortified battalion of the crack Barantrin Regiment.

May 3-May 4 Inclusive:

Patrols during the night discovered and reported that there were indications of a large-scale German withdrawal. Commencing at dawn on the 3rd, all elements started a vigorous mounted reconnaissance push in the direction of Mateur.

No enemy fire was drawn until daylight of the 4th. as Squadron was in tactical bivouac outside the town. Squadron received 88mm shelling. Assigned to 1st Armored Division, this date, and the entire Squadron moved to the vicinity of Michaud. Having been ordered to clear Djebel Achkel of enemy troops, we established observation posts thereon. Reports from civilians placed 2 enemy infantry companies there.

May 4th mounted patrols from the Squadron made every effort but were unsuccessful in attempts actually to get on Djebel Achkel. However, much small arms fire was received on all sides of the mountain by these patrols; and from information gained thereby, the Squadron was able to formulate a well coördinated plan of attack.

The patrols also learned that this mountain afforded the enemy thereon a virtual fortress of tunnels previously operated as metal mines under the French. In addition, the entire 4½-mile long and 1½-mile wide fortress was completely surrounded by waist deep swamp, which prevented any known type vehicle from approaching closer than approximately 1 mile. This forced a great disadvantage upon us in that a great many of our vehicular weapons, so badly needed, were eliminated from desired use.

May 5-6 Inclusive:

The Squadron was still engaged in repeated attacks on a concealed, well covered and determined enemy force on Djebel Achkel. About 30 German prisoners were taken; the Squadron suffered 27 casualties. Prisoners confirmed that this well equipped force was of the Hermann Goering Division.

May 7:

At daylight on May 7th, in compliance with orders from the Commanding General, 1st Armored Division, the Squadron moved from Michaud to a mission of reconnaissance toward Ferryville on the general line of the Mateur-Ferryville road. One troop remained on the Djebel Achkel mission.

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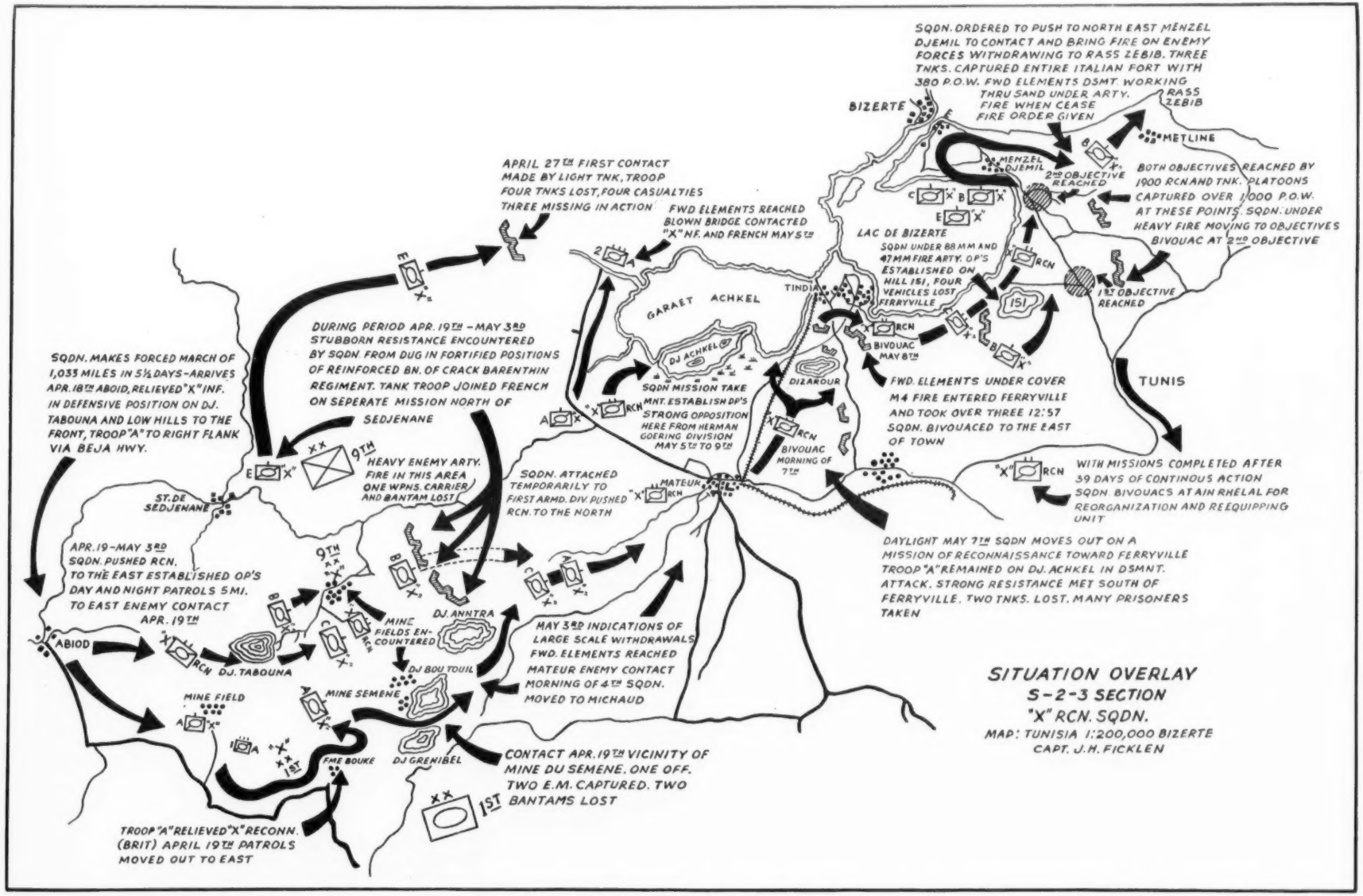
*S-2/3 of "X" Reconnaissance Squadron.


SQDN. ORDERED TO PUSH TO NORTH EAST MENZEL DJEMIL TO CONTACT AND BRING FIRE ON ENEMY FORCES WITHDRAWING TO RASS ZEBIB. THREE TNKS. CAPTURED ENTIRE ITALIAN FORT WITH 380 P.O.W. FWD ELEMENTS DSMT. WORKING THRU SAND UNDER ARTY. FIRE WHEN CEASE FIRE ORDER GIVEN
BIZERTE
RASS ZEBIB
METLINE
MENZEL DJEMIL
2ND OBJECTIVE REACHED
BOTH OBJECTIVES REACHED BY 1900 RCN AND TNK. PLATOONS CAPTURED OVER 1,000 P.O.W. AT THESE POINTS SQDN. UNDER HEAVY FIRE MOVING TO OBJECTIVES BIVOUAC AT 2ND OBJECTIVE
APRIL 27TH FIRST CONTACT MADE BY LIGHT TNK, TROOP FOUR TNKS LOST, FOUR CASUALTIES THREE MISSING IN ACTION
FWD ELEMENTS REACHED BLOWN BRIDGE CONTACTED "X" N.F. AND FRENCH MAY 5TH
LAC DE BIZERTE
SQDN UNDER 88 MM AND 47 MM FIRE ARTY. OP'S ESTABLISHED ON HILL 151, FOUR VEHICLES LOST FERRYVILLE
TINDIA
GARAET ACHKEL
DJ ACHKEL
151
1ST OBJECTIVE REACHED
BIVOUAC MAY 8TH
DURING PERIOD APR. 19TH – MAY 3RD STUBBORN RESISTANCE ENCOUNTERED BY SQDN. FROM DUG IN FORTIFIED POSITIONS OF REINFORCED BN. OF CRACK BARENTHIN REGIMENT. TANK TROOP JOINED FRENCH ON SEPERATE MISSION NORTH OF SEDJENANE
SQDN. MAKES FORCED MARCH OF 1,033 MILES IN 5½ DAYS – ARRIVES APR. 18TH ABOID, RELIEVED "X" INF. IN DEFENSIVE POSITION ON DJ. TABOUNA AND LOW HILLS TO THE FRONT, TROOP "A" TO RIGHT FLANK VIA BEJA HWY.
SQDN MISSION TAKE MNT. ESTABLISH OP'S STRONG OPPOSITION HERE FROM HERMAN GOERING DIVISION MAY 5TH TO 9TH
DIZAROUR
BIVOUAC MORNING OF 7TH
FWD. ELEMENTS UNDER COVER M4 FIRE ENTERED FERRYVILLE AND TOOK OVER THREE 12:57 SQDN. BIVOUACED TO THE EAST OF TOWN
TUNIS
WITH MISSIONS COMPLETED AFTER 39 DAYS OF CONTINOUS ACTION SQDN. BIVOUACS AT AIN RHELAL FOR REORGANIZATION AND REEQUIPPING UNIT
HEAVY ENEMY ARTY. FIRE IN THIS AREA ONE WPNS. CARRIER AND BANTAM LOST
ST. DE SEDJENANE
SQDN. ATTACHED TEMPORARILY TO FIRST ARMD. DIV. PUSHED RCN. TO THE NORTH
MATEUR
DAYLIGHT MAY 7TH SQDN MOVES OUT ON A MISSION OF RECONNAISSANCE TOWARD FERRYVILLE TROOP "A" REMAINED ON DJ. ACHKEL IN DSMNT. ATTACK. STRONG RESISTANCE MET SOUTH OF FERRYVILLE. TWO TNKS. LOST. MANY PRISONERS TAKEN
APR. 19 – MAY 3RD SQDN. PUSHED RCN. TO THE EAST ESTABLISHED OP'S DAY AND NIGHT PATROLS 5 MI. TO EAST ENEMY CONTACT APR. 19TH
ABIOD
DJ. TABOUNA
MINE FIELDS ENCOUNTERED
DJ. ANNTRA
DJ BOU TOUIL
MAY 3RD INDICATIONS OF LARGE SCALE WITHDRAWALS FWD. ELEMENTS REACHED MATEUR ENEMY CONTACT MORNING OF 4TH SQDN. MOVED TO MICHAUD
MINE FIELD
MINE SEMENE
FME BOUKE
DJ GRENIBEL
CONTACT APR. 19TH VICINITY OF MINE DU SEMENE. ONE OFF. TWO E.M. CAPTURED. TWO BANTAMS LOST
1ST
TROOP "A" RELIEVED "X" RECONN. (BRIT) APRIL 19TH PATROLS MOVED OUT TO EAST
SITUATION OVERLAY
S-2-3 SECTION
"X" RCN. SQDN.
MAP: TUNISIA 1:200,000 BIZERTE
CAPT. J.H. FICKLEN

Route traversed by "X" Reconnaissance Squadron, April 18-May 10.

After encountering stiff artillery, antitank, and small arms resistance south of Ferryville on the road and from the hills to the immediate east of the road, forward elements of the Squadron under the cover of some M-4 fire, entered Ferryville and took over there at 12:57.

The 60,000 French refugees of the town overwhelmed our reconnaissance patrols with cheering and crowding the streets at the arrival of American troops.

The Squadron bivouacked tactically at approximately 2 miles east of Ferryville on the night of the 7th.

May 8:

The Squadron moved at daylight northeast toward the general direction of Munzel-Djemil and came under terrific enemy 88mm and 47mm fire from positions generally in front of Djebel Kechabta. An 88mm versus an M-4 and M-10 battle developed here about 10:30 hours, and the Squadron confirmed its activities and established O.P.'s for artillery fire control. At approximately 18:00 hours one of our tank platoons succeeded in reaching and securing an important RJ 11 miles east of Ferryville on the Bizerte-Tunis highway. Approximately 1,000 prisoners were sent to the rear by this platoon.

At approximately the same time another tank platoon with a reconnaissance platoon attacked, was successful in reaching an Italian held naval six-gun shore battery between Menzel-Djemil and Bizerte. The conclusion of this was the surrender of the battery and all personnel therein—approximately 500 men and officers. That same night the balance of the Squadron moved to a point 3 miles south of Menzel-Djemil on the main Tunis-Bizerte highway.

HEADQUARTERS 1st ARMORED DIVISION

17 May 1943

SUBJECT: Commendation.

TO: Commanding Officer "X" Reconnaissance Squadron.

1. I wish to commend you for the excellent manner in which your battalion performed their assigned duties while attached to this division.

2. I particularly wish to commend you and your organization for their operations during the period May 7 to May 9, the attack which resulted in the capture of Ferryville and subsequently engaged enemy positions to the east thereof. The whole-hearted coöperation of all ranks and the ready response to orders contributed, to a great extent, to the successful operation of this Division.

MAJOR GENERAL, U. S. Army,
Commanding.

May 9:

The Squadron was ordered to push reconnaissance to the northeast of Menzel-Djemil, toward the beaches, to contact and bring fire on enemy forces withdrawing toward Rass Zebib.

Forward elements were advancing dismounted through the sand under enemy artillery fire from the northeast when at 11:10 hours the following message was received from the Commanding General, 1st Armored Division: "Cease firing and hold present position until further orders. Germans have surrendered."

Thus ended 39 days of missions in which the Squadron was constantly active and during which time, it is believed, proved its ability to function efficiently as a reconnaissance team.

Conclusions

1. There must be continuous night dismounted patrolling by each reconnaissance platoon.

2. Safe and secure methods of visual signals must be developed among friendly patrols.

3. No high ground must ever be passed by without scouting the summit with a view to the establishment of an O.P. prior to arrival of platoon proper.

4. Reconnaissance platoon leaders must be afforded the means for requesting and directing immediate friendly artillery.

5. Reconnaissance radio reports must be quick, constant, by voice, and above all, accurate. Time does not permit CW and encoding.

6. As many individuals as possible within the platoon must be afforded a good night's rest. Future planned patrols should rest *before* going out.

7. All individuals of the platoon *must* know maps, sketches and rapid use of the compass—when casualties occur, someone *must* get the information back.

8. In past operations, reconnaissance platoons in general have made far too little use of their 37mm guns and 81mm mortars.

9. Too little planning is done regarding the use of *covered* (not concealed), approaches toward enemy installations.

10. Rapid movement during shelling is essential.

11. The best riflemen within the platoon should be equipped with telescopic sights.

12. When exposed vehicular movement is necessary while under fire, supporting weapons *must* cover this movement with stationary fire.

13. Officers must realize the extreme importance of maps covering the territory in which they are to operate. They should thoroughly familiarize themselves with the area in such a manner that they can throw the map away and still know the country. It is absolutely criminal for any officers to go on a mission without the proper knowledge of the maps and the terrain he is to cover. Noncommissioned officers as well as officers must know how to read maps and report positions by coördinates.

British Tank Attack at Fondouk Pass

by Major C. B. Ormerod, Royal British Artillery

Acme.

Men and armored vehicles of the British First Army move to attack a nest of Axis troops. The above picture shows a Crusader cruiser tank and Bren gun carrier, armed with U. S. Browning M2.

ON APRIL 9, 1943, an armored unit of the British First Army was ordered to force its way, at all costs, through a large minefield defending Fondouk, a mountain pass in central Tunisia. The minefield was shaped irregularly, but by chance one troop hit on a lane and got through. That troop was never seen again. Three squadrons then spent the afternoon trying to force their way through, regardless of damage to tanks, or of fire from machine guns or mortars.

Nearly every tank in the leading squadron was disabled, and the squadron leader was shot in the head by a sniper as he left his crippled tank. Three or four tanks struggled through and knocked out several enemy antitank guns that might have seriously held up the advance. The remainder persisted until blown up by mines. Each successive troop extended, at the cost of its own tanks and lives, the lane opened up by its predecessors. Thirty tanks were disabled, though many of these were later recovered and repaired.

When it was clear that the attempt could not succeed, another armored force was ordered to try to find a way around the minefield via a wadi on the left, which was also mined. Eventually, a squadron did this, and got around to the rear of the town. The remainder followed, and the infantry secured the heights to the north. The enemy then evacuated Fondouk.

This action illustrates very well both the limitations and the advantages of modern armor.

We are not told the circumstances under which it became imperative for the British armor to attempt the passage of the Nazi minefield before a way had been cleared for it, but it may be assumed that the matter was urgent, and that delay might have seriously interfered with the development of the Allied commander's plans. At any rate, in spite of what appears to have been a very determined attempt, this direct assault by tanks on the strongly prepared position failed.

Once a way had been found around the minefield, and the pass was forced, the tanks were out in the open and were able to demonstrate their particular functions —outflanking enemy rearguards, meeting and driving off counterattacks by enemy armor, and breaking in upon the retreating transport vehicles.

After the capture of Fondouk a start was made for Kairouan on the morning of April 10th, and for the next two days the armored cars showed how such a unit should operate. They reconnoitered far and wide and took at least 700 of the 1,500 prisoners captured in the operation.

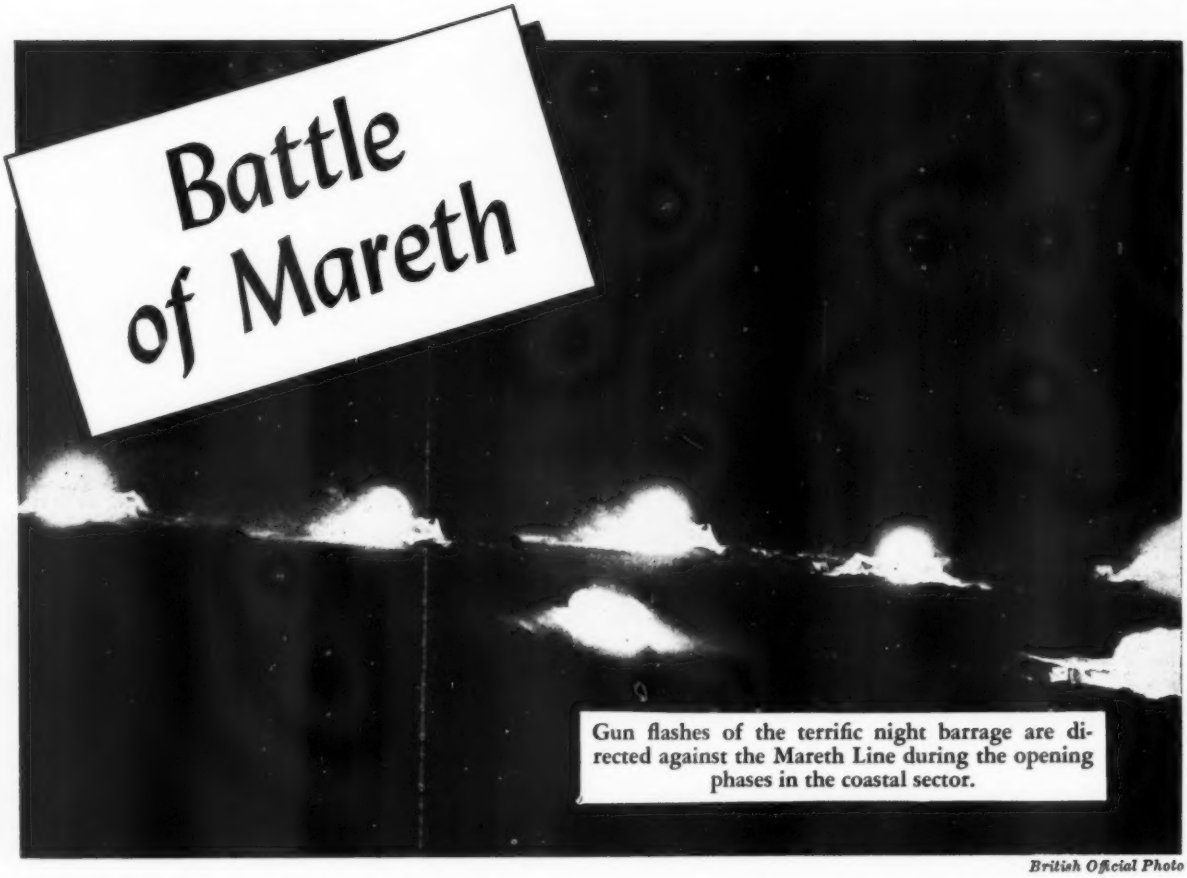
About midday, on April 10th, the armored units of the First Army repelled, in two hours of battle, the 50 tanks remaining to the 10th and 21st Panzer Divisions (a part of the original *Afrika Korps*), that had been sent up hurriedly from the south to cope with this flank attack. By drawing off this armor, the First Army materially helped the Eighth Army's advance. Having drawn them off, they destroyed 13 of the tanks, 15 self-propelled guns, 20 antitank guns, and forced the remainder to withdraw.

The next morning, British armored cars from the First Army entered Kairouan and contacted the Eighth Army. Even before that, however, the armor had swung northward and was driving the enemy before it. At 1 P.M., about 12 miles north of Kairouan, it met an enemy rearguard of a weak infantry battalion with field guns, self-propelled guns, and 25 tanks well posted on high ground with their flanks protected. The British attacked, and after four hours of fighting, the enemy tanks began to withdraw.

Meanwhile, some of the British tanks got around the left flank under cover of the enemy's smoke barrage and did great damage among his transport, destroyed 40 vehicles, 12 tanks and decisively broke the rearguard.

This account omits all reference to the activities of the Allied, or Axis air forces, but from contemporary newspaper reports it is believed that, during the period in question, the Allies had effective air control over the area in which the fighting was taking place.

Battle of Mareth



Gun flashes of the terrific night barrage are directed against the Mareth Line during the opening phases in the coastal sector.

British Official Photo

THE British Eighth Army, under the leadership of General Montgomery, can now add the word "Mareth" to its list of battle honors. This engagement will undoubtedly rank close behind that of El Alamein in strategic importance and tactical brilliance.

In brief, the Battle of Mareth was a brilliant example of a successful turning movement following on a temporary frontal attack.

The initial attack began on March 20th with the establishment of a bridgehead over the Wadi Zigzau. After the infantry had fought its way across the Wadi Zigzau to the ridge beyond and bridged the Wadi with brushwood to enable vehicles to cross under the most appalling fire, they met a series of heavy counterattacks. At first they held their ground under the most difficult conditions, and a break-through appeared imminent; but after some 36 hours the enemy brought such pressure to bear that they were forced back, with very heavy casualties. By Tuesday, March 23rd, the enemy had regained most of the ground that he had lost at the coastal end of the Mareth Line. When this news was first announced, it looked like a very serious reverse. Now that it can be fitted into the picture as a whole, this frontal attack on the eastern wing has all of the appearance of an experimental probe.

On March 22nd the British attack was switched further inland, and the infantry occupied some ground south of Wadi Zigzau about three miles north of the Mareth-Medenine road. Meanwhile, continued intense air and artillery pressure began to tell on the enemy. At the same time an exploratory column, consisting of tanks, motorized infantry and guns, was sent on its daring trek around the enemy's western flank.

Various pieces in Montgomery's tactics now begin to come together in closely-knit unity. Two probes were driven into Rommel's heavily fortified quadrilateral—one frontal, and the other enfilading. The frontal assault tested the possibility of a direct break-through along the coast and also compelled Rommel to bring a large concentration of his troops and armor to the southeast corner of his position. Similarly, the enfilading probe toward El Hamma tested the feasibility of throwing a proportion of the Eighth Army against the enemy's rear, and obliged Rommel to face west as well as south and so to dissipate his strength.

While the frontal drive was pushed back, the enfilading probe made good by fixing itself deep in the enemy's flank. Under the cover of darkness a force, consisting of New Zealanders and one armored division under General Freyburg, moved rapidly around the western slopes of the Matmata hills. Then, striking north along the jolting track, they made for El Hamma, which they reached on March 24th.

An attempt to outflank the Mareth Line had been fully expected by Rommel. Even before the Allied command had announced that the Eighth Army had begun its resumed offensive, the German communiqué had stated that a British column had moved around the Mareth Line positions and was advancing "to the northeast." This column was confronted by a strong force, in-

cluding German armor; and it was only after stiff fighting that it was able to establish itself in the area between Djebel Tebaga and Djebel Melab, and along the foothills on both flanks.

Rommel then switched everything he could afford, including armor, against this daring and dangerous thrust against his rear. But there was no letup in the relentless pressure along the front of the Mareth Line positions. Rommel, with this threat to his flank, had no alternative but to withdraw to the previously prepared Akarit position. The action at El Hamma lasted from March 24th to 29th, when British troops entered Gabes.

The operation which finally broke the crust was launched on March 26th. Three regiments of British tanks attacked the enemy on a front of 600 yards beyond the Roman wall.

The enemy had batteries of antitank guns arranged in depth, supported by German tanks—some dug-in, some mobile. Field and medium guns were also directed with great accuracy from wonderful observation posts in the hills.

British tanks advanced in extended line, like a cavalry charge of old. In front of them rolled a creeping barrage.

The tanks charged the antitank guns, which opened up from the front and from either flank. Many fired at point blank range. Some of the tanks were hit; others came on. As they passed the antitank gun positions, the men leaned out of their tanks and annihilated the gun crews with hand grenades. Machine guns on tanks were busy too.

By dusk the tanks as well as the infantry, were established beyond their objective. The force for El Hamma was already well on its way.

The blow to the enemy, so far as their part of the front was concerned, was mortal; and history will probably decide that it was the "beginning of the end" of the African Campaign. Though our losses were severe, the enemy's were heavier. Eight thousand prisoners were taken, and one panzer division almost entirely destroyed.

The retreating Rommel was forced to make a stand. He was out-maneuvered, out-gunned and out-fought. With the ever present threat of the Americans on his flank, he retreated to the hills and abandoned, as usual, his Italian allies.

The rest of the story is well known. The last battle of this war on African soil has been fought. Americans, British, and French all had their share in the final victory, but the Battle of Mareth will well deserve its place in history. Perhaps because subsequent events moved so rapidly, this first of the series of Tunisian victories has received too little mention.

The turning of the Mareth defenses was carried out by a rapid and perfectly organized outflanking movement. British Crusader tanks push into El Hamma after the retreating enemy. The sign in German lettering reads "watering place."

British Official Photo

These two shattered tanks resemble the Mark VI "Tigers" but are really the newest Mark IVs. Parts of a Mark VI lie between them.

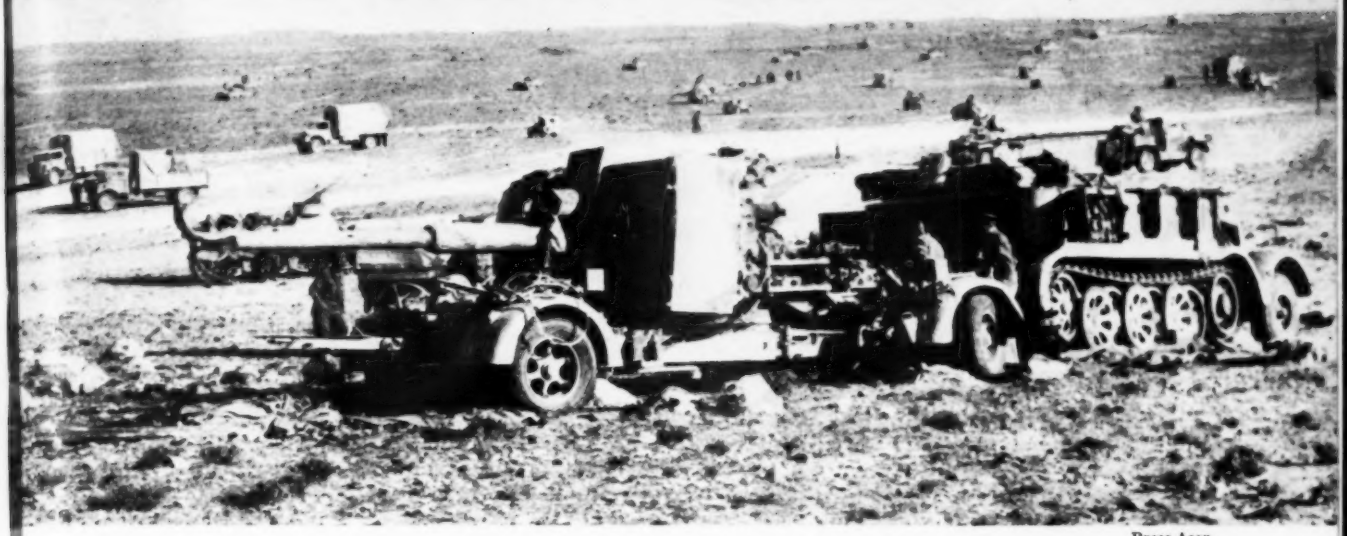
British Official Photo.

This gun turret from a 60-ton Mark VI "Tiger" tank has been torn completely away from the tank.

British Official Photo.

At right is a Mark III tank, which now mounts a long 50mm gun as standard equipment. Note the "spaced armor" layer held well in front of turret face and of face in front of driver.

British Official Photo.



Press Assn.

This Flak 41, new super high velocity 88mm dual purpose gun and its tractor was captured near the Mareth Line. Unable to get it away, the Germans destroyed the muzzle of the gun.

Axis Matériel

The wreckage of this Italian self-propelled antiaircraft gun left behind in Central Tunisia, is inspected by American soldiers.

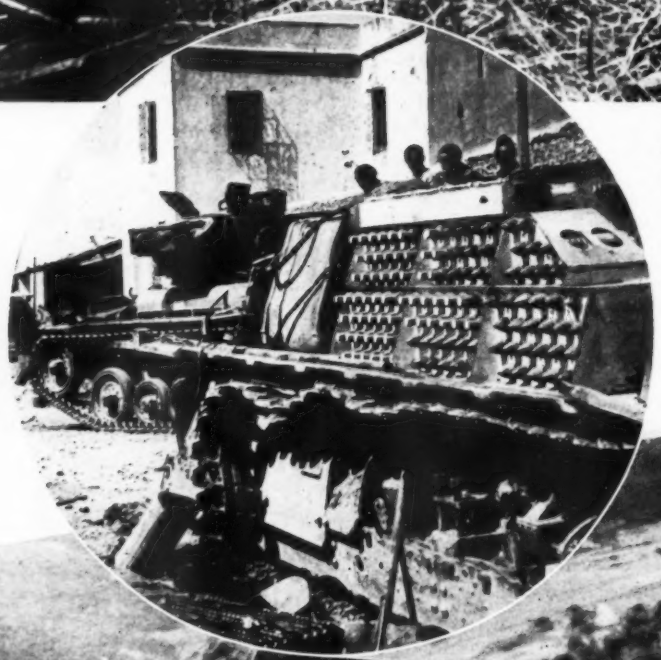
Press Assn.

Closeup of the 60-ton Mark VI "Tiger" tank.

This German antitank gun captured near Medjez-El-Bab has high explosive bomb projector.

Captured

Acme.



This British tank and ex-French munitions carrier were re-captured at Porto Farina, where the German 10th and 15th Panzer Divisions were trapped.

This Mark II tank rests by the roadside near Mateur.

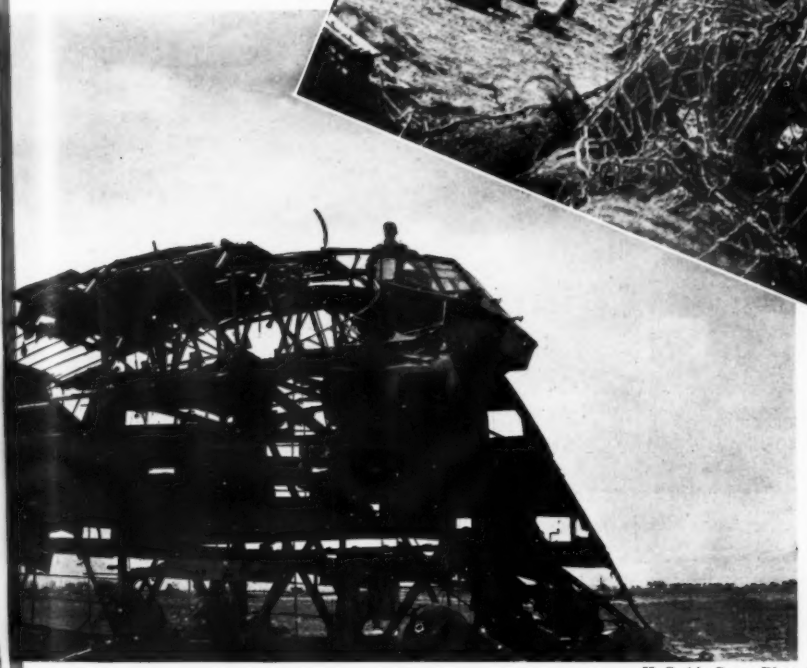
European.

Acme.

The Germans have now fitted their standard 105 mm howitzer (z.f.h.18) with a recoil-reducing muzzle brake. This battery was abandoned near Tunis. The Germans neglected to blow up the gun tubes.

Tunisia

European.



U. S. Air Corps Photo.

This wrecked hull found at the Tunis Airport is believed to be the remains of an Me-323, 6-motored transport plane converted from a glider.

More than 100 enemy aircraft which had been put out of action by our bombers were found on an airfield in the Daba area. Here are scores of Messerschmitt Me109 fuselages collected by the units as soon as they occupied the airfiield. Many more remained to be collected.

Hong Kong Campaign

by Colonel C. Stanton Babcock,
formerly attached to United States
Embassy, Tokyo

Acme

Hong Kong under Japanese attack.

The First Day of Attack

At dawn on December 8,[1] 1941, a squadron of Japanese light reconnaissance bombers took off from an airdrome on the outskirts of Canton. Ten minutes later when they appeared over the Kowloon airfield, they found the RAF Hong Kong detachment (some four or five old training planes) and the entire commercial fleet of the China National Aviation Corporation drawn up for inspection in front of the hangars.

Cruising leisurely about over the field, the Japanese airmen bombed these targets with no more difficulty than if they had been at bombing practice on a range in peacetime. When they left, half an hour later, the hangars were on fire, most of the planes on the ground had been damaged or destroyed, the China Clipper had been sunk, and one of the huge oil tanks of the Standard Oil Company was blazing furiously. There had been no serious antiaircraft fire, and the dive bombers returned to their base without the loss of a single plane.

As the first bombs were dropping on Kowloon, the leading units of the Japanese ground force crossed the border of the Leased Territory. These were the advance guards of the 9th Division, attacking from the north, and the 103d Division, pushing southeast from Canton. Resistance at first was negligible; in fact, except for a few patrols acting as frontier guards, no contact was made with the British until late in the morning. The Japanese gave as the reason for their slow and cautious advance their expectation of stiffer opposition and their suspicion that the enemy was trying to lead them into a trap.

As the advance guards of the two columns neared the "Outer Line" (the first defensive position stretching from sea to sea about a mile inside the border), they took up an approach march formation and moved forward as though expecting to be fired on at any minute. A mile or so in rear, with the heads of the columns just about at the border, the two main bodies rested quietly along the road until their advance detachments developed the situation sufficiently for them to move out once more. With no enemy air force to fear, the troops were allowed to relax almost as if they had been on a peacetime practice march.

It soon developed that the "Outer Line" was undefended and contained only a few observer groups which withdrew well in advance of the Japanese columns, and the march was resumed. Messages dropped on the columns by reconnaissance planes informed the commanders that there was great confusion on the roads

[1]Dates in this area, west of the International Date Line, are 1 day advanced over those used in the United States.

leading north from Kowloon; that British troops were moving into the "Inner Line" (about two miles from Kowloon); but that there was no evidence of any real activity in the neighborhood of the "Intermediate Line," a previously prepared defensive position lying half-way between the "Outer" and "Inner" lines. The Japanese, however, refused to believe that some sort of resistance would not be offered along this second position. Once more they halted their columns, deployed the advance guards, and cautiously felt out the line; their advance guard artillery even threw a few shells into the position in an effort to stir up some activity among whatever forces were in their front.

By the time that the Japanese had satisfied themselves that there was in fact nothing opposing them, it was late in the afternoon. Word came down from Force Headquarters to halt along the line generally occupied by the troops at the time, and to establish a strong outpost line about one mile south of the former British "Intermediate Line." This extraordinarily cautious attitude was strangely out of keeping with the dash and *élan* shown by Japanese troops in other sectors, and it is possible that in this campaign they had been somewhat misinformed by their Intelligence agencies as to British intentions.

These troops, too, had been engaged for the last two years in operations against the Communist Fourth Route Army in China, and there they had learned that too hasty an advance frequently led to disaster. Several references in personal experience articles written by officers of this unit to the effect that "the situation greatly resembled a Communist guerrilla trap" would indicate that this consideration was at least in the minds of many of the officers, and may have carried some weight in influencing the attitude of the expedition commander.

Attack on Mainland Positions (Dec. 9th to 13th)

Still concerned about the British, with whom as yet they had not even made contact, the Japanese established two very strong outposts. They reinforced the advance guards and sent out a number of strong patrols. Each consisted of one or two platoons, which operated in the flat country stretching between their outposts and the line of hills where the British "Inner Line" was located. Fully expecting to contact British patrols the Japanese combed the area all night, but without result. Not even a flare went up from the heights which the British had occupied, and, as one young officer put it, "The continuing quiet created a strange feeling of apprehension. It was impossible that the enemy would let us come so far without a fight. Something was sure to happen." But nothing did. When at dawn the planes went out to reconnoiter, it became evident that the British were planning a purely passive defense, and that the Japanese would not meet interference until they actually attacked the British line.

Even so, the Japanese had a formidable task ahead of them. The line, which was about three miles long, consisted of a number of strong points made up of concrete pill boxes located just below the crest on the forward slope of a range of hills that stretched from sea to sea. Because the hills rise steeply out of the flat plain, the troops could avail themselves of virtually no cover as they advanced toward the British lines. The two roads along which the Japanese were advancing climb steeply over this range through narrow passes, one near each end of the line.

The Japanese spent the next two days in reconnoitering and developing the defensive position. They kept their main forces well back out of artillery range and shelled the British forward positions at extreme range, so that their own artillery was not greatly interfered with by the guns on Hong Kong island. Small patrols carefully reconnoitered the country over which the troops would have to attack in their final assault.

The Conquest of Hong Kong from the Japanese point of view.

Like the two installments of "Philippine Campaign," written by Colonel Babcock, this account of operations in the Hong Kong Campaign is based on information drawn entirely from Japanese sources: official bulletins, news reports, speeches, radio commentaries, magazine articles, and personal experience accounts written by officers and men at the front. The only Allied bulletins used were those quoted in the Japanese press.

Colonel Babcock says: "While confined to the compound of the American Embassy in Tokyo from the outbreak of war until June 17, 1942, I was cut off from any outside news. Consequently, the preparation of this paper has not been influenced by information received through any but Japanese sources. It should also be remembered that all dates are one day advanced over those used in the United States."

On the afternoon of the 10th, three offensive patrols the size of a company were sent out to gain contact with British advance posts and to capture some prisoners. They encountered little resistance, for the outposts fell back promptly under cover of a machine gun barrage from the main position. A few Indians, influenced by handbills scattered over their lines by Japanese planes, stayed behind and surrendered when their detachments withdrew. These furnished the Japanese with the first prisoners of the campaign.

From these prisoners and from reconnaissance patrols, the Japanese learned that the position in their front consisted of a single line of concrete pill boxes manned by one British battalion (the Royal Scots) and two Indian battalions, and that close-up artillery support was furnished by one six-gun battery of 25-pounders. Plenty of wire had been laid on the slopes in

front of the pill boxes, but, according to Japanese accounts, the organization of defensive fires was very weak; there were far too few machine guns for the size of the sector, and only two places where interlocking bands of fire were used.

On the next day (December 11th) the Japanese carried out what they refer to as a "reconnaissance in force," but just what it was intended to accomplish is not clear. They used three battalions in this operation and preceded the advance with a thirty-minute artillery preparation which seems to have pretty thoroughly broken up the British wire. The force used was not strong enough to do much more than again drive in the outposts, and the Japanese appear to have withdrawn without gaining any important results. They admit that on the morning of the 12th all of their troops were back in their original positions.

By this time the Japanese seem to have come to the conclusion that the key to the enemy position was Shin Mun, the strong point on the right of the sector occupied by the Royal Scots. This battalion was on the left of the line, so that the pill box was about one mile in from the western shore of the peninsula. On the reverse (British) side of the hills, a long ravine running down from Kinchan to the southwest, opened out into the plain close to the shore and about a kilometer behind the lines. Once in possession of this strong point, the attackers would have a covered route leading well into the British area and would be in a position to assist the general frontal attack by pressure from the flank and rear. Aerial reconnaissance had shown that this ravine was the chief British axis of communication.

British antiaircraft guns in Hong Kong. This picture was made when Hong Kong seemed an impregnable fortress.

European

Cutting it would add greatly to the confusion still evident behind the enemy lines.

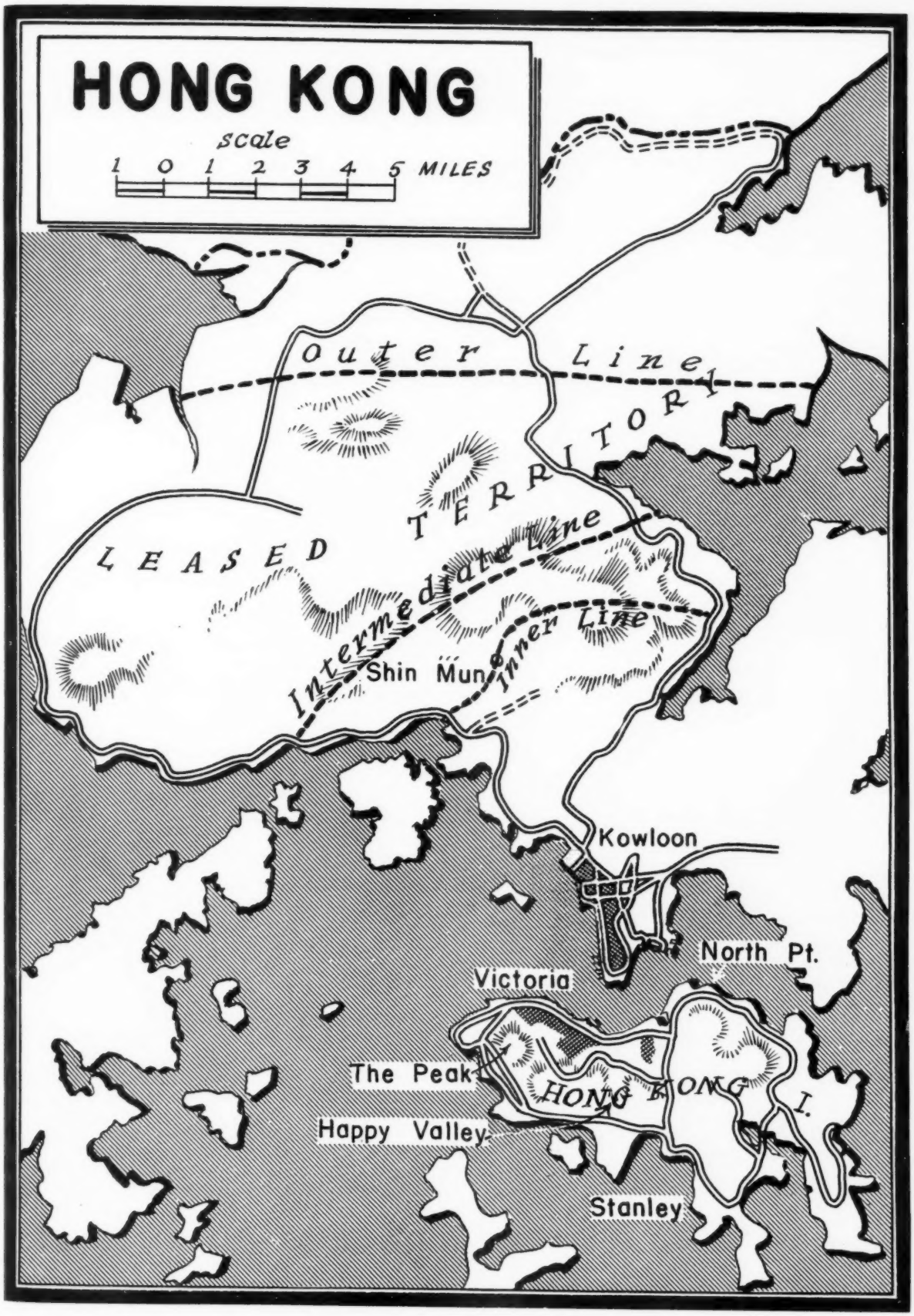
On the 12th, the Japanese staged a night attack with a battalion of infantry reinforced by a company of engineers. There was no artillery preparation, for this was intended as a surprise attack, but the batteries had all ranged in on their targets during the afternoon and were ready to put down their barrages whenever called for. With the engineers out in front clearing the way through the wire, the troops worked their way through the darkness toward the crest of the hill. Not until the Japanese had advanced to within less than a hundred yards of the pill box did the British send up their first flare. Once they were discovered, the Japanese abandoned all caution, called for artillery support (which came down as a box barrage at the head of the ravine), ripped a way through the remaining wire with grenades, and attempted to storm the position in one wild rush.

The British fire was too heavy, and after nearly half the engineers had been wiped out, all the machine guns, light and heavy, of the battalion were brought up and their fire concentrated on the gun ports of the pill box. Under cover of this fire, small groups of Japanese worked up close enough to use flame throwers and grenades on the ports, while other units cleaned up the supporting machine gun nests and rifle groups in the vicinity. A very few minutes with the flame throwers sufficed to make the garrison surrender. The Japanese then worked feverishly to reorganize the captured position in preparation for the counterattack which they momentarily expected.

But no attack came. During the night a few shells from one of the forts at Hong Kong fell in the area, but otherwise all was quiet. By daylight the Japanese not only had organized the area for defense, but had brought up two fresh battalions and were ready from this position to attack the flanks and rear of the British forces on their right and left, in coördination with a general attack all along the line which had been planned for eleven o'clock that morning.

Although the Japanese were in a strong position and were sure that they eventually would drive the enemy out, they were planning on a three- or four-day fight, and expected a lot of opposition before they accomplished this result. The artillery preparation started at dawn. Shortly afterwards a number of light bombers flew out to add their loads to the bombardment. A few minutes later, Headquarters was astounded to receive a message from the planes that the British had abandoned the entire position and that their columns were in full retreat. One British battalion was deployed as a covering detachment on the outskirts of Kowloon, and the rest of the force had practically completed the move across the narrow strip of water to the island.

Orders went out at once for the troops to advance, and the Japanese infantry pushed forward and up the heights as rapidly as possible, but for some reason no effort was made to cut off the British or to pursue them


HONG KONG
scale
1 0 1 2 3 4 5 MILES
Outer Line
LEASED TERRITORY
Intermediate Line
Inner Line
Shin Mun
Kowloon
North Pt.
Victoria
The Peak
HONG KONG I.
Happy Valley
Stanley

into Kowloon. From their observation points on the crest of the captured hills, the Japanese could clearly see the British rear guard withdrawing towards the ferry, but they made no attempt to interfere with it and contented themselves with throwing a few shells into the outskirts of the city. They finally entered Kowloon about four o'clock in the afternoon and took over the job of policing the city, which they say had been in a state of wild disorder ever since the withdrawal of the British troops that morning.

The Attack on Hong Kong Island

During the next few days, the Japanese were occupied in "restoring peace and order in the Kowloon peninsula"; collecting all the small boats they could find between Canton and Kowloon; "securing and protecting the oil farms" on the peninsula, none of which had been destroyed by the British; and establishing gun positions on the captured heights from which they could shell the fortress of Hong Kong. They bombed gun positions and other military objectives on the island once or twice each day, but they used only a few light reconnaissance bombers at a time. Apparently no attempt was made to lay down any heavy concentrations during this period.

According to Japanese accounts, the British were even more inactive. Little if any attempt was made to interdict the passes over the hills north of Kowloon, and the invaders poured troops down into the plain, in full view of the observation posts on Victoria Peak, with very little interference and with a minimum of casualties. Not a single round was fired at the oil farms in Kowloon, although a battery could have set the entire place ablaze in fifteen minutes of good shooting. On the day before they crossed to the island, the Japanese shelled the Victoria waterfront all afternoon with trench mortars set up on the Kowloon docks, without eliciting any answering fire from the British positions.

On the night of the 18th, the Japanese crossed the straits and landed on Hong Kong at North Point. Artillery fire during the afternoon and evening had put the British pill boxes in that area out of action and set fire to a number of oil tanks located there. There was very little fighting.

The confusion caused by the smoke from the burning tanks seems to have prevented the British from realizing what was happening, and two companies of the leading Japanese battalion were already ashore before they came under fire. There was a short fire fight but no counterattack by the defenders, and when the other two companies landed, the British withdrew about a kilometer to some high ground at the base of the little peninsula. From some prisoners captured in this engagement, the Japanese learned that the troops opposing them were a battalion of the Middlesex Regiment.

All day long in full view of the British observation posts, the Japanese ferried men and matériel across to North Point. As the successive increments of reinforcements arrived, they enlarged the beachhead, and gradually forced the British back towards the hills in the center of the island. Until late in the afternoon, when the beachhead had been enlarged sufficiently to provide plenty of maneuver space, the peninsula of North Point was, by the Japanese' own admission, a scene of terrible crowding and confusion. The area was well within the range and field of fire of at least three batteries of fortress guns, and the Japanese frankly admit that they accomplished their mission with so few casualties only because the British failed to bring a sufficient concentration on this sector during the first and second days after the landing.

From this time on until the surrender, the battle consisted, for the Japanese, of a slow but steady enlargement of their beachhead. They concentrated their main strength in such a way as to drive south towards the center of the island in an atempt to isolate the defending troops stationed in the eastern part. The advance was slow, for the terrain was difficult and the British defense stubborn; but progress was steady, and was rarely hampered by counterattacks.

The British failure to counterattack puzzled the Japanese throughout the campaign. It was not until after the surrender that they found out that defense plans provided for only a limited number of reserves, so that when the line was once broken sufficient troops to retake the lost ground simply were not available. The absence of reserves, and the lack of depth in all their defensive positions, indicate that the British placed excessive reliance on the ability of their line of pill boxes to repulse any attempted landing. Japanese criticism of the British defense was that it lacked flexibility, and, once pierced, was difficult to reorganize.

By the 21st the British, realizing that their garrisons at Stanley and other parts of the eastern and southeastern shore were seriously threatened by the Japanese push southward from North Point, withdrew all troops from those areas and established a new line which swept in a large semicircle around the skirts of the Peak. Here they dug in for their final defense, and the Japanese say that the severest fighting of this little campaign took place during those last three or four days.

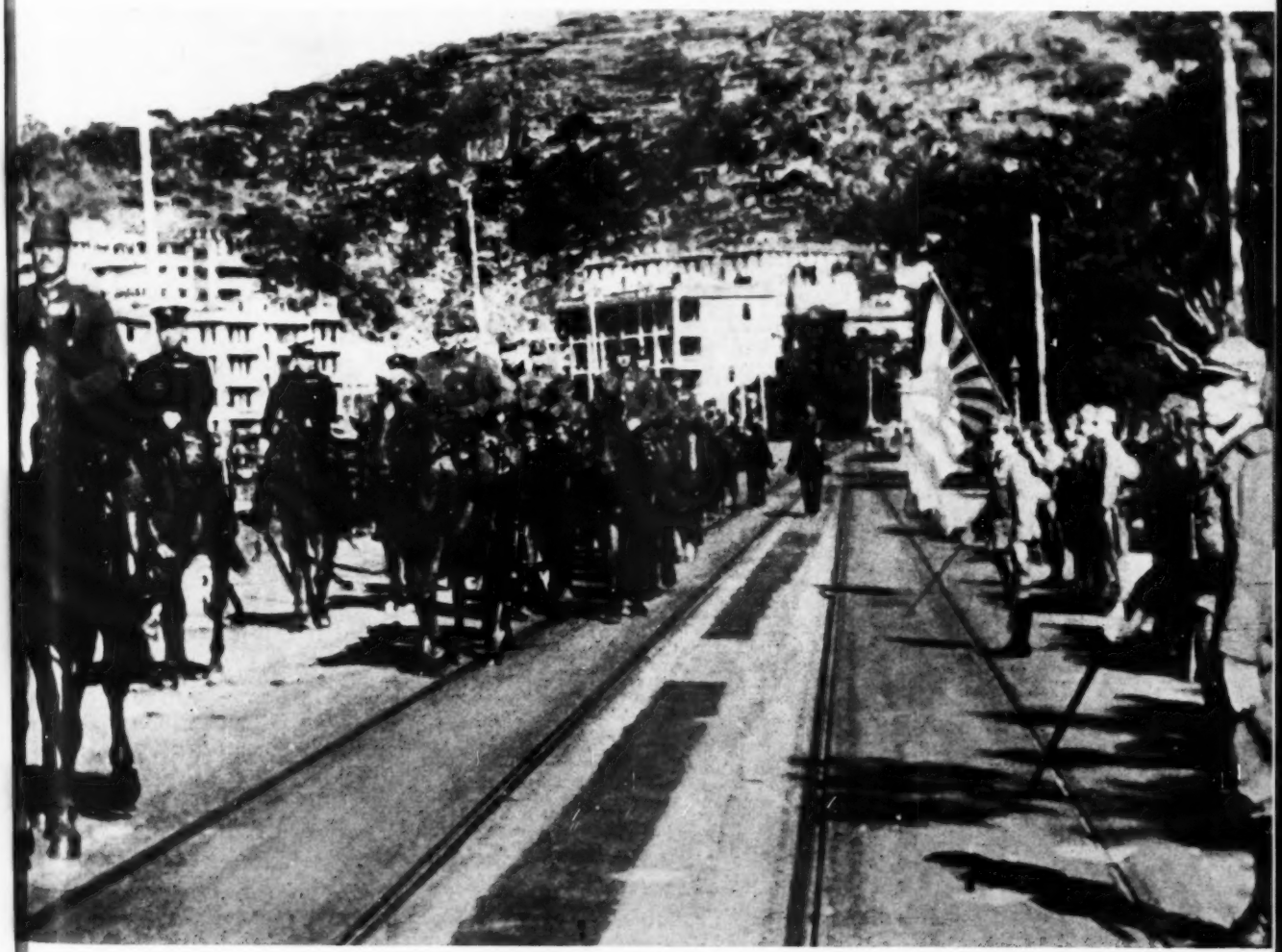
It was, however, only a matter of time. Powerless to stop the constant stream of troops which poured in to reinforce the attackers, the British were pushed farther and farther up the slopes of the Peak. On the 23rd an unopposed landing was made at Stanley (abandoned by the British two days previously), and additional pressure was brought against the defensive ring from the south. The General Officer in Command was in favor of surrendering at this time, but the Japanese demand was refused by the Governor. The next morning the Japanese put down a heavy concentration on the sector manned by one of the Canadian battalions at the head of Happy Valley, and later in the day followed it up with an infantry assault. As the leading Japanese battalion jumped off, a squadron of light

bombers came in low over the Canadians, strafed them with light fragmentation bombs and machine gunned them. The troops stood their ground well and evidently brought down one of the machines, for the Japanese account refers to "an intrepid Wild Eagle who, deliberately dashing his plane onto the ground, caused it to explode within the enemy ranks and threw them into utter confusion."

The Canadians had been pretty badly mauled, for they were not dug in sufficiently to withstand such prolonged artillery bombardment nor an attack from the air. When the Japanese infantry moved into the position early in the afternoon, they found many casualties lying in the shallow individual "fox holes," which were the only protection the troops had made for themselves. The lack of even the simplest kind of shelter trench shows the disorganization of the defending troops in this final stage of the battle.

The surrender came the next morning, on Christmas Day. The persistent, uninterrupted advance of the Japanese, the confusion behind their own lines which made it impossible to organize and launch a counter-attack, and the realization that further resistance would only postpone the inevitable and cause serious loss of life among the exhausted troops, finally convinced the Governor of the hopelessness of the situation and caused him to surrender the island and the forces under his command.

On the 26th the Japanese staged a formal triumphant entry into the city of Victoria. Lining the streets were thousands of Chinese, waving little Japanese flags and cheering the long columns of tanks and guns and marching men. In what the Japanese described as a "never-to-be-forgotten ceremony, the first of the Anglo-Saxon strongholds of imperialism in the Far East fell to the advancing champions of the New Order."



JAPS MARCHING INTO HONG KONG

The Japanese title on this picture said it showed victorious troops marching into Hong Kong after the British Citadel fell. Along with mounted army officers are seen two Japanese naval officers. This picture came to the U. S. by way of Brazil.

Editorial Comment

Stalingrad—the Modern Cannae

For many years we have been reading and discussing the pros and cons of the double envelopment in battle strategy. It is well known that this was a favorite with the German General Staff and very probably influenced them, at least to some small degree, in their tables of organization.

The late Count von Schlieffen, whom the Germans practically idolize as one of the military geniuses of his day, believed that the principle employed at Cannae (complete annihilation and extermination of the enemy by encirclement) was just as feasible and effective in modern warfare as it was when Hannibal surrounded the Roman troops under Varro. The Roman troops were partially annihilated and the rest taken prisoners.

Since the late Count's day, German military experts have bragged of the time when they would pull a "Cannae" on Germany's enemies. It is quite probable that many attempted imitations of Cannae can be found in German military history, but as yet it is difficult to find the real classical example of mass encirclement and annihilation.

Of profound interest, therefore, is the hand of destiny which reached out at Stalingrad and pulled the trick on the Nazis themselves. It was Hitler's fair haired boys who thought that they were the "real McCoy" as exponents of the art of encirclement. Yet it was the Soviet High Command who played the part of Hannibal, and Colonel General von Paulus who was forcibly obliged to be the Terentius Varro in the modern version of Cannae.

Nikolai Tikhonov gives us an interesting story in the official account of the Battle of Stalingrad in which he states:

"Lieutenant General Waldemar Erfurt, Senior Quartermaster of the Military-Historical Department of the Geńeral Staff of the German Army, has written a special treatise entitled, *Victory Entailing the Complete Annihilation of the Enemy,* in which, after examining all of the military operations recorded in history similar to those of the Battle of Cannae, he makes the following observation: 'The course of the Battle of Cannae, provides no clue to the way a modern general should surround and exterminate his adversary.' He then proceeds to analyze the operations of the German Army during the last World War, but is forced to the melancholy conclusion that none of the battles that might have been a Cannae actually turned out to be such.

"He even extols the Abyssinian campaign conducted by the Italian Marshal Badoglio, who with a vast and well equipped army tried to surround the poorly armed Abyssinian forces. But in spite of Mussolini's comic opera parody of the order of former great captains—"Surround the enemy and destroy him!"—Badoglio utterly disgraced himself. The Abyssinians calmly withdrew beyond the reach of his blows.

"The present war, however, has already provided the German Command with a classical example of Cannae. The future students of German military history will not have to go far for an illustration of Schlieffen's famous proposition. The Count may turn in his grave, but that will not alter matters. Hereafter, the word "Stalingrad" will cause the German generals to look round in fright to see whether the specter of Cannae is following them.

"Erfurt was right: 'The course of the Battle of Cannae provides no clue to the way a modern general should surround and exterminate his adversary.' The clue will be found in the course of the Battle of Stalingrad.

The Red Army has administered a stern lesson in history to the swashbuckling adventurers of the German General Staff, and has added a chapter to history upon the reading of which all of Hitler's generals will gnash their teeth in impotent rage. The Red Army has shown the whole world what Cannae really looks like, and how to achieve its objective—the annihilation of the enemy."

* * *

Thus Spake Der Fuhrer

Hitler's long silence during 1943 is a more significant barometer of the course of the war than were his perfidious braggings of previous years. The following choice selections, taken from speeches and proclamations made by *Der Fuhrer* in the past, were collected and published by *News Week* last year.

December 30, 1939: "May 1940 bring a decision. Come what may it will be our victory."

September 4, 1940: "Whatever may come, England will break down. I recognize no other termination. The people of England are very curious. When the British say, 'He doesn't come,' my answer is, 'Keep your shirts on—he is coming.' "

December 31, 1940: "The year 1941 will bring consummation of the greatest victory in our history. The year 1941 will see the German army, navy and air force powerfully strengthened and with improved armaments. Under its blows the last phases of the war criminals will then collapse. We give assurance that for every bomb dropped on us, a hundred will be returned."

November 8, 1941: "Never was a great empire smashed and destroyed in shorter time than was Soviet Russia. (Leningrad) is surrounded and it will fall into our hands. At the end of this year we probably can say

this greatest danger (from Russia) already has been averted. We can have no doubt that the destiny of Europe for the next 1000 years has been decided."

September 30, 1942: "In my eyes, the year 1942 has behind it the most fateful trial of our people. That was the winter of '41 to '42. Nothing worse can or will happen. Either all (of us) must survive victoriously together or be destined for extermination together. Under no circumstances will we ever capitulate. That they ever will beat us is impossible and out of the question."

In a recent order, purportedly issued to troops just prior to the 1943 summer offensive against Russia, Hitler produces new phrases of evasion and contradiction. He says that the 1943 Russian offensive "must be the decisive turning point of the war. The battle will be difficult, but it's the last one for victorious Germany." He neglects to explain just when or where Germany found it desirable for the war to have a "turning point" or just how, in one last battle, she can subdue the whole of the armed might opposing her from south and west as well as east.

Hitler's Strategy Turned Against Him

The peace of Europe depended on an incomplete system of collective security. To destroy this system, Hitler followed the teaching of Clausewitz; first divide the forces of your opponent, then destroy each force singly, one after the other.—Major F. O. Miksche, *Attack.*

The Atlantic Wall

As the Axis reels under increasing Allied blows, the German propaganda ministry boasts ever louder of the wall of fortifications erected along the west coast of Europe as a protection against invasion.

For a change, the Germans seem to have neglected their military history. Fortified walls have never been invulnerable against a determined foe. It is not necessary to go back beyond the present war to find examples of strong prepared fortifications that failed miserably when put to the crucial test. It was, in fact, the Germans themselves who pierced the Maginot line at its "hinge," poured troops through the breach, and quickly took the fortifications from the rear. They even turned the fortress guns on the French army that previously had manned them.

More recently, on the border between Tripoli and Tunisia, Rommel utilized the fortified Mareth Line for a final stand against the British Eighth Army, only to be outflanked when the British penetrated the difficult terrain to the south and reached the rear of the Mareth fortifications almost in time to cut off the German retreat.

These striking examples of the inadequacy of fixed fortifications should warn the Axis that an Atlantic wall is not enough. There are ways around and over walls.

Not only have fortified walls proved inadequate defense in this war, but natural barriers have become less formidable. Mountains have been crossed, a desert conquered, and the Allies have now accomplished successful sea-borne invasions in the South Pacific, on the North African Mainland, and more recently (with a fleet of 2000 ships), the Italian island of Sicily.

The American Military Institute

Admiral Mahan once described his fellow Americans as "combative and warlike but the reverse of military." Among the great powers, the United States is the only country in which the civilian study of military problems has received no official support.

For many years the American Military Institute, a non-government association organized in 1933 under the laws of the District of Columbia, has attempted to fill in this gap. Its mission is to promote the historical study of war and military power, especially as these problems relate to the security of the United States.

From 1936 onward the American Military Institute has published *Military Affairs*, the only scholarly publication dealing with the military subjects in the United States. It has published this well-edited journal at a loss and needs the support of all men in the service and civilian life who see that our national welfare is intimately connected with military matters. It is particularly important that the American Military Institute receives enough support to enable it to carry on its vital functions in the post-war period when the temptation to "get back to normalcy" and "forget the army" will be great.

Membership in the Institute is "elective" but is open to those in the armed services and civil life who appreciate the importance and desire to encourage the study of military power and institutions in these critical times. Those who wish to become members should send their names to Dr. Harold Sprout, 3 Dickinson Hall, Princeton, New Jersey. Annual dues are $3.00 which includes a subscription to *Military Affairs*. Life memberships are $50.00 and a Founder membership can be established by contributing $250.00 or more.

Institutions or individuals who are not in a position to become members may subscribe to *Military Affairs* at the membership rate. Gifts to the working funds of the American Military Institute are urgently needed.

The officers of the American Military Institute are:

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Dr. Edward G. Campbell, Editor

General Hawkins' Notes

Some Comments on Training for Combat

A DISTINGUISHED officer, who has already had a lot of fighting experience in this war, has given me a short list of observations on handling and training troops that correspond so closely to my own conclusions, drawn from experience in campaign and in training, that I present them briefly here in my Notes.

Loading troops on transports without regard to organization and with noncommissioned officers separated from their men is faulty. Boat drill, police, and control in case of torpedoing and bombing, are all greatly improved by preserving the integrity of units.

Sizing companies for the sake of appearance breaks down organization.

Fatigue details should not be made indiscriminately without regard to organization. The numbers of men necessary should be found by detailing squads, platoons, or parts of such units rather than by detailing individuals from a company list without regard to the organization of the company.

In an attack, the soldier has many things to discourage his advance—enemy fire of all kinds, barbed wire, difficult terrain, fatigue. In training, the soldier must be taught to use accidents of the ground as cover for his further advance. When he halts, he should remain no longer than necessary to get his breath and determine the spot of cover to which his next dash forward will carry him.

This instinct for self preservation can be overcome by training—teaching the soldier team-play with his comrades, instilling a sense of duty toward the small units on his right or left, and by inculcating a desire to close with the enemy. This can be done by practicing exercises across ground in simulated attacks. It cannot be done by lazy, careless advances in erect postures while carrying out tactical exercises or maneuvers. Squad and platoon leaders especially should be careful to keep up the forward impulse and to avoid by every possible means that inertia which can develop so quickly in a small command.

In all exercises, the team play between squads and platoons must be kept in mind constantly. To this end, the integrity of the squad and platoon must be preserved in all training, combat exercises, marching, camping, fatigue duty, and even in games.

In our national sports there is always a substitute, fresh and ready to take the place of a tired or injured member of the team. In battle, however, there is no rest, no replacement. The job of the unit must go on despite casualties to men or equipment. A lost leader must be replaced at once, not by some leader sent up from the rear, but by some man in the unit who voluntarily takes over the leadership. Further, the unit must go on with reduced numbers and reduced equipment. This also can be practiced in tactical exercises.

Mixture of small units in combat must be regarded as inevitable. Such mixture must be practiced deliberately so as to learn how to bring order out of confusion quickly. This practice, both day and night, brings great dividends in actual campaign.

Thus, we should practice, not only the preparation for combat and the advance to combat, but also the combat itself (as this friend of mine expressed it) the tail-end of a combat. Losses of numerical strength, loss of leaders and equipment, confusion in the combat groups, mixture of units, general fatigue, and a powerful inertia must all be expected, faced, and overcome. This can be done only by anticipating these things and then training to overcome them.

Good shooting with guns of all calibers is the first essential in training. The next essential is that the soldier and small unit leader know and practice the skilful methods of using the ground to avoid casualties.

Leaders of larger units must see and study the ground over which they contemplate advancing their troops. Ground on which there is absolutely no cover from aimed enemy fire should be avoided for advancing troops for long distances—say more than one hundred yards in successive stretches. This can often be done by narrowing the fronts of various units and increasing their depth of deployment.

Cover from high angle fire or from airplane bombing can seldom be found in open country, but cover from aimed small arms fire is often provided by ridges, gullies, and water courses. Cover from observation is important even though no actual cover from the flight of projectiles or bombs is possible.

By means of training and discipline, the men and machines can be made to avoid bunching. This fault of bunching is very noticeable in our maneuvers and is seen very often in photographs of troops actually under fire in battle.

The desire to get forward and close with the enemy will be much enhanced if the men realize that it can be done without excessive losses and if they have been trained so as to know how to do this. Furthermore, if the men realize that their leaders, of large as well as small units, will not commit them to ground where they have no chance whatever to survive, they will respond with a determination to close with the enemy as quickly as possible.

German Ordnance Captured Near Stalingrad

Sovfoto

The gun in the right foreground is probably a 25mm French Hotchkiss magazine-fed AT-AA. Note the lunette wheels lying against the 75mm Pak 97/38 and the Pak 38. The Hotchkiss has a big flash hider. The Pak 97/38's brake is also a flash hider. Note the double shield on the Pak 38s and 97/38s.

At right is the French Model 1897 (their and our standard 75mm gun) mounted by the Germans on their split-trailed, low-silhouette 50mm Pak 38 antitank carriage. This has been made possible by the addition of a muzzle-brake, which preserves stability without the necessity of a heavy carriage because it cuts the recoil. The muzzle brake (seen in picture below) looks more French than German. This new combination is designated the Pak 97/38. It fires HE as well as armor-piercing shell. Apparently the rounds are now semi-fixed. The complete weapon adds a third wheel to the lunette and is light enough to be man-handled by three men.

Sovfoto

Encirclement at Stalingrad

This double flanking maneuver around the German Sixth Army was spearheaded from the north by tanks — from the south by tanks and cavalry in coördinated day and night assault.

THE plan of the Russian High Command in the great winter offensive of 1942-43 was to break through the German lines simultaneously in two places, northwest and southwest of Stalingrad. Then the two massive pincers, curving deeply through the German rear, would come together somewhere near the railroad line from Stalingrad to Likhaya, and thus completely encircle the German Sixth Army, which occupied the whole area west of Stalingrad to the Don—roughly, about 50 square miles.

One of the most important features of this plan—vitally important for the success of its initial stage—was to *launch the northern blow along the right, on the western bank of the Don.* The blow was timed to fall before the Don would freeze solidly and when only two crossings would be available for tanks and heavy vehicles—one, the bridge at Kalach; another, the railroad bridge on the Likhaya line farther south. The brittle, thin ice on the river made any crossings with heavy loads out of the question.

It follows then that a successful break-through, starting on the western bank from the Serafimovitch bridgehead, could sweep down the bend without much danger of being stopped by a quick counterblow of the Sixth Army, whose maneuver would be tied up by the formidable natural obstacle of the Don, and the Russians would have to reckon only with the German forces located in the bend of the river. Considerable as they were, they were far less redoubtable than the powerful concentrations of the Sixth Army beyond the river. This was the reason why, for many weeks, when Stalingrad's plight was growing daily, the Russians continued to fight with the utmost tenacity for this bridgehead and never fell for the temptation of diverting their considerable reserves in this area to the assistance of the besieged city. It is hard to understand how the German Command could have missed so completely the significance of this fighting.

For the success of this plan, two factors were vital, outside of the possession of the bridgehead:

(1) After the break-through, the sweep down the western bank had to be accomplished with the utmost speed. That made it necessary to spearhead the offensive by powerful tank formations, and *these formations had to advance and fight day and night without interruption,* until the first important objective—the Kalach crossing and the Likhaya railroad—were reached. Leisurely, all-night stop-overs, under the guard of motorized infantry, as advocated by the pre-war doctrine, were clearly out of the question.

(2) If, in the first stage of the operation, the mechanized thrust from Serafimovitch succeeded in capturing the Kalach crossing intact before the retreating Germans could blow it up, then the junction of the two pincers (the northern one moving along the western bank, and the southern one moving up from Abgenerovo to the eastern bank) would be much facilitated, and the encirclement of the Sixth Army virtually assured.

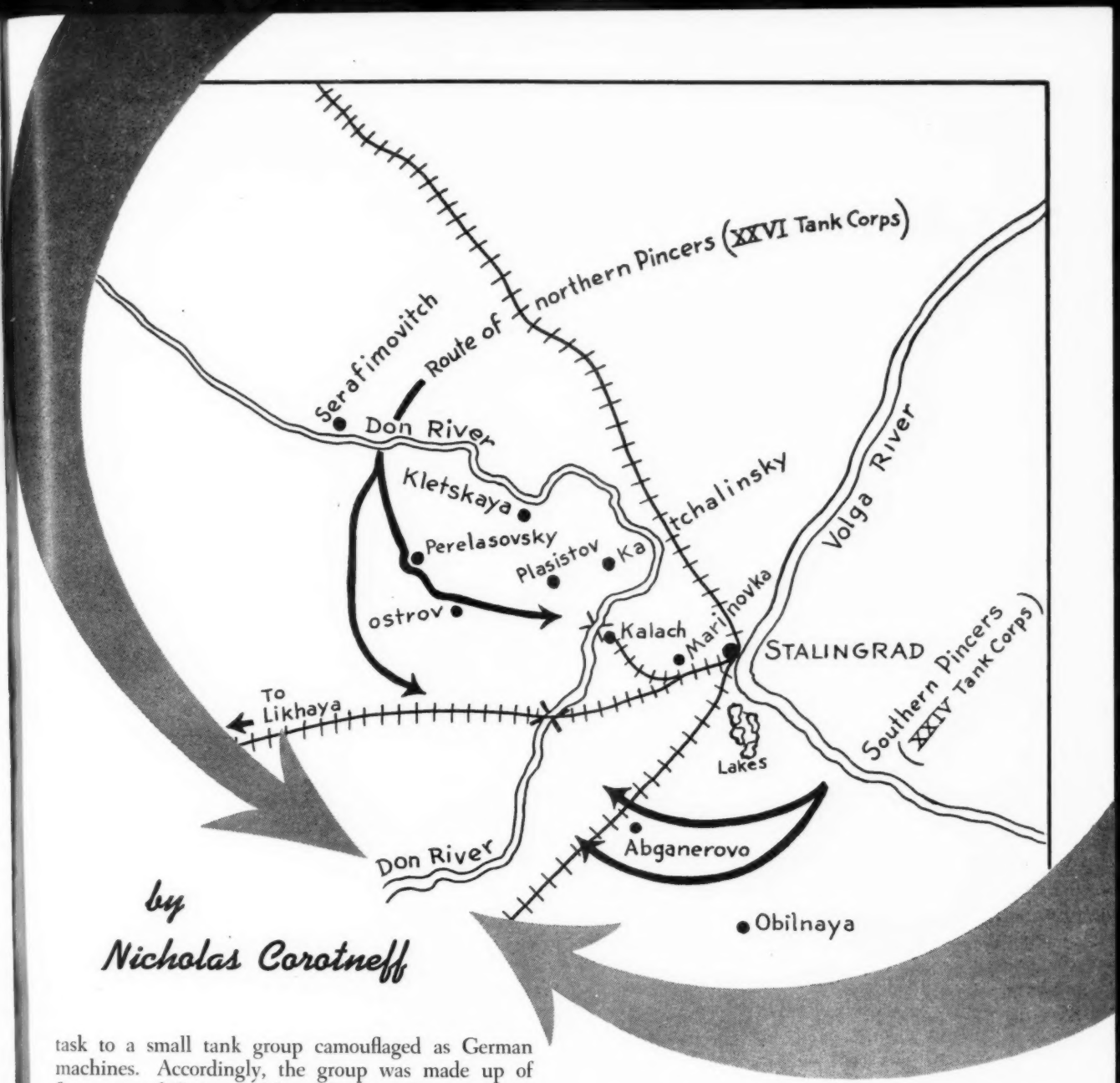
The means necessary to insure the first factor were obvious—careful preparation covering every detail, and arduous, specialized training of the units assigned to the task. During this training, which went on for many weeks before the raid, the greatest stress was placed on night actions.

The tanks of the XXVI Tank Corps spent endless hours driving without lights through stretches of terrain exactly similar to the one to be encountered in the Don bend—steppes criss-crossed by a maze of gullies and ravines—some of them shallow, some of them deep, all with cliff-like banks. Steering was done by compass only. Replicas of antitank obstacles most widely used by Germans in this sector were strewn all over the training grounds, and tankmen and engineers acquired experience in detecting them in the darkness and removing them quickly.

Two days before the beginning of the offensive, a war game, in which all commanders participated, was played at the corps headquarters over the projected route of the road. Then battalion commanders organized war games for the junior officers, with objectives correspondingly reduced.

A solution of the second important problem—the capture of the Kalach bridge—was also reached. It was clear that the undertaking would succeed only if the element of surprise were overwhelming. The Russian Command knew that the bridge was mined just for such an emergency and could be blown up instantly. The only way to beat the Germans to the draw was to seize it in one lightning move. That could be done only by a small, fast-moving mechanized force that could slip through the German lines unobserved, or at least unimpeded.

The solution was logical and simple—to entrust this



by

Nicholas Corotneff

task to a small tank group camouflaged as German machines. Accordingly, the group was made up of five captured German tanks, and two or three trucks of the type used by their motorized divisions. Sixty specially trained tommy gunners completed the force. Some of them rode atop the tanks, the way the Russian and German landing parties do; the rest rode in trucks which were armed with several machine guns. The detachment was commanded by an experienced and resourceful officer, Captain Philipov. The tanks bore swastikas and other German insignia. Whether the deception was carried all the way through and the crews and tommy gunners were clad in German uniforms, the account does not mention.

The break-through operations began at dawn on November 19th, in the usual way, with infantry, artillery and engineers blasting the way for the tanks. A thick fog, dense as milk, according to some accounts, reduced visibility greatly. However, there was no hesitation in launching the tank attack, as everybody was completely confident that they would keep to the appointed course and get through. As previously decided, guides, recruited from local inhabitants, were put in the leading tanks.

The first German line was completely smashed and left without resistance. The second line was broken through without much trouble, and with the corps moving in two columns the advance continued at a somewhat increased speed.

First Night

The columns moved off the roads right over ice-bound terrain, and spent considerable time in crossing gullies and ravines, but despite all difficulties continued on the course. Lights were switched on, and the

going became easier. A strong wind gradually reached the strength of a blizzard. Tanks steered by compass had to stop frequently to clean the port-holes from snow and check the bearings. The first landmark, a burning state farm, was reached and passed.

After some artillery fire was heard on the right flank, lights were switched off. In the middle of the night, a short stop was made for re-fueling. A tank column, moving on a parallel course, but in the opposite direction, was observed at that time on the left flank. Assuming that the column was German, it was decided not to molest them and let them advance to their inevitable doom. Scouts that were sent out to check up on the column, returned shortly and reported that the tanks were German ones.

At daybreak, some real fighting took place around four villages. The first three villages were attacked right from the march and quickly taken. In the fourth one, Perelasovsky, a more stubborn resistance was encountered because of the presence there of a German army corps headquarters. The village was turned from both flanks by motorized infantry and successfully stormed.[1] The few hours left of the night were spent there under the protection of an all-round advance guard of motorized units which repulsed two German counter-attacks. Early in the morning, the advance was resumed and, with intermittent fighting, went on all day, registering a progress of over 40 kilometers for the day.

The Second Night

The corps stopped for the night in a large village, Ostrov, which was taken some time in the evening. A strong reconnaissance was sent towards the Don, and a report came soon that the main defense zone of the enemy was located within about 20 kilometers from the village. In the meanwhile, in order to obtain as much information as possible on the Kalach crossing, many village inhabitants were questioned.

The commander was elated when the intelligence officers succeeded in locating a peasant woman from Kalach who had just come into the village to buy food. She was immediately brought to the headquarters, and the interrogation brought out several important facts. Apparently, the Germans at Kalach had not grasped as yet the full significance of the break-through and did not show any particular signs of alarm. Local inhabitants still could cross the bridge freely, without even showing their documents to the sentries. German tanks and automobiles still crossed the bridge with lights.

This information augured well for the success of Philipov's assignment. About 5 o'clock in the morning, still in complete darkness, his small detachment left on its dangerous mission. He was instructed to proceed in regular German marching formation with all lights on.

About half an hour later, the main columns of the XXVI Tank Corps also moved out. The German defense zone was soon reached and here, at daybreak, the most stubborn fighting of the raid began. One after another, the numerous German strong points were subdued, and several villages in the fortified zone were stormed by the left column of Major Philipenko.

(These two Commanders, Philipov and Philipenko, with their similar names, created a good deal of confusion in some of the Soviet accounts. Philipov commanded the advance detachment of five captured German tanks sent ahead to secure the Kalach bridge. Philipenko commanded the left column of the main spearhead formed by the XXVI Tank Corps.)

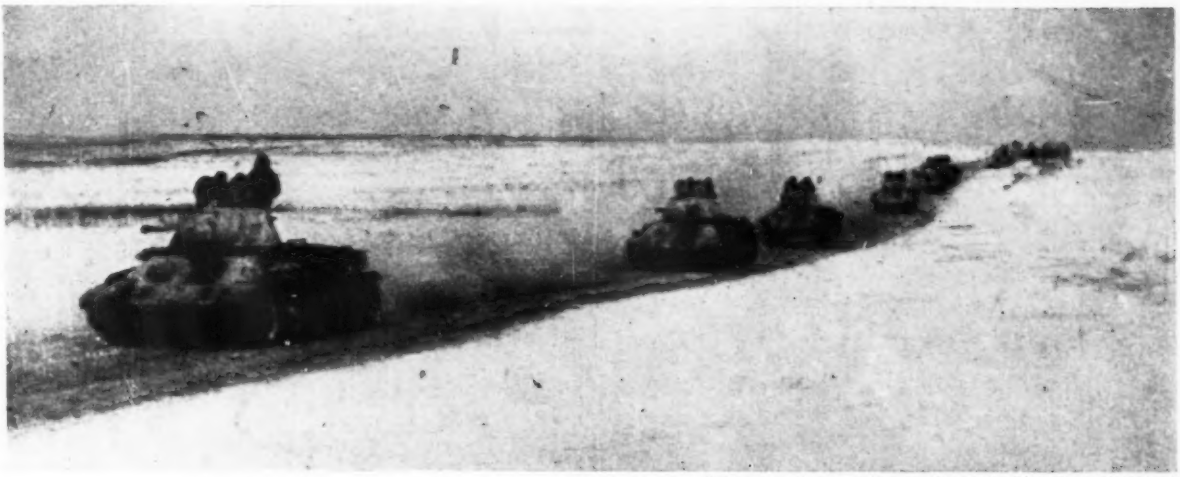
The two most important villages – Plesistov and Katchalinsky—were taken by Philipenko's column in deep turning movements. By the middle of the afternoon, the German resistance was broken.

The tension at headquarters, though, was not relieved. Hours passed without any report from Philipov, and the anxiety for the fate of his detachment mounted. Finally, it was surmised that his mission must have met

[1]For a more detailed account of this particular action, see General Rodin's article, "Tank Operations in the Enemy's Rear," January-February CAVALRY JOURNAL.

Battle scene from official war film "City That Stopped Hitler."

This picture shows cavalry in action south of Stalingrad where it was used with tanks to form the southern pincer.



Battle scene from official war film "City That Stopped Hitler."

Tank reinforcements are shown moving to the front during the Stalingrad offensive.

with failure, and Philipenko's column was ordered to proceed to the crossing immediately and to relieve his group, if it were not too late.

At 5 o'clock Philipov's report finally came in, and the spirits in headquarters soared. His raid was a complete success. The small detachment had gone through the German lines with perfect ease, without eliciting any suspicions, and made a non-stop run from Ostrov right to the bridge. Neither were they stopped by the sentries at the crossing. The leading tank, with lights blazing, was midway across when the tommy gunners from the following tanks jumped off and took care of the German sentries. As a matter of fact, this achievement proved to be the easiest part of Philipov's task.

After the bridge was captured, Philipov immediately organized an all-round defense and none too soon. The baffled Germans quickly recovered and launched a counterattack from Kalatch on the eastern bank of the Don. At the same time, some German units, retreating down the western bank, much to their surprise found the Kalach bridge in Russian hands and attacked from the western bank of the Don on Philipov's rear. From daybreak until the middle of the afternoon, the little group fought alone. Then Philipenko, breaking through from the west with the left column of the XXVI Tank Corps, joined forces and the fight continued until darkness.

The Third Night

The main forces reached the Don soon after darkness. By that time the German counterattacks from Kalach, directed against the little group defending the bridgehead, began to weaken. The arrival of the main column of the XXVI Tank Corps* broke them up completely, and fighting ceased shortly after midnight. The rest of the night was spent in organizing the attack on Kalach, getting artillery into positions, etc. Early in the morning, the attack on the town started with Philipov's and Philipenko's units still in the vanguard. Kalach was taken shortly after 10 o'clock in the morning, and the German garrison began a hasty and disorderly retreat. The first stage of the break-through was completed.

Advance of the Southern Pincer

The advance of the southern group, whose spearhead was the XXIV Tank Corps,* which started almost simultaneously with the northern group, was equally successful. On this sector, the main German defense zone was sited along the chain of lakes which run in an almost straight line south of Stalingrad.

The two raids were very similar in their main features. Such fighting as took place at night was invariably successful, and the main German base in the southern sector – the town and railway station of Abganerovo—was reached and successfully stormed, according to plan, at just about the same time that the northern group near Kalach. The amount of matériel captured at Abganerovo was enormous.

Although few details are yet available, it is known that one factor, which was absent in the northern part of the offensive, played an important rôle in the advance of the southern group. The tanks of this group were closely followed by large cavalry formations which, according to the Soviet's accounts, brilliantly fulfilled their task of securing the territory gained by the mechanized thrust and completed the German rout.

Exact accounts of what happened on the next day are not available. It seems, however, that both Corps, which blazed the trail for the great encirclement, were relieved by other formations almost immediately upon reaching their key objectives. It is known, at least, that two pincers around the German Sixth Army came together either late on November 23rd, or in the early hours of the 24th, somewhere south of the village of Marinovka, west of Kalach.

*The XXVI Tank Corps was later changed to the I Guard Tank Corps; and the XXIV Tank Corps to the II Guard Tank Corps.

Red Cavalry Plays Va

The most powerful cavalry on earth, combined with air and armor in summer, successfully combats enemy panzers—and drives en masse in winter in pursuit and defeat of retreating Germans.

THE Red Army had at the start of this war, and still possesses, the most powerful cavalry force on earth. Strong as it was at the start of hostilities, it is today in even better shape, thanks to its extensive reorganization, accompanied by the widespread introduction of more powerful weapons and the increased use of motor transport.

While in many armies world-famous cavalry units with long and honorable traditions have been mechanized during this war and have abandoned horses, the contrary is true of the Red Army, which has maintained the cavalry as one of its most important arms.

Cavalry Vital In Pursuit

Cavalry has been exceedingly useful, not only as a scouting element both for ordinary reconnaissance and for combat reconnaissance, but as a pursuit force in the winter offensives, which perhaps have furnished its most dramatic rôle.

Main bodies of cavalry have not usually been mixed with other branches of the army, but have been held in reserve for pursuit at the ripe moment, when, after Soviet tanks and infantry have smashed the enemy line, saber-bearing horsemen have ridden after the fleeing enemy.[1] There have even been cases where Soviet cavalry has successfully attacked armored forces.

The Axis does not have any cavalry comparable in quantity to the Russians. When the Moscow counter-offensive opened in December, 1941, Soviet horsemen, plowing through snowfields and woods, were able to out-maneuver the enemy who were limited to the highways.

Air-Armor-Cavalry in Collaboration

Pursuit operations are somewhat more limited in summer than in winter, and at this time of the year have far more favorable chances of success in wooded areas, where cover is available.

However, as one of the movements toward making Red cavalry more efficient since 1941, it has been trained to work with armor, and now on many special missions horsemen and tanks are collaborating and both are receiving air support. This has produced the combined use of two of the newest and one of the oldest branches of the military service, in what the Red Army reports to be a most effective fashion.

Such forms of mixed collaboration are employed by the Red cavalry, especially in summer, when armor is not so limited to road communications, and these strange triangular combinations of air, motor, and horse have more than once given battle with success to enemy panzer units. In such instances, the Russian horsemen, bearing long-barreled antitank rifles as lances while mounted, dismount and become antitank units.

Reconnaissance Behind Enemy Lines

On many reconnaissance parties, Red cavalrymen using radio transmitters, have been able to penetrate far behind the German lines and, working almost as guerillas, have caused considerable havoc and transmitted important information to their headquarters. In such cases, the Red air force frequently assigns a few planes to keep an eye on them.

"Numerous examples of well-conducted mounted reconnaissance have insured the success of major operation," one Soviet military expert says. "The most important factors in its favor are the great mobility of the light mounted force, as well as its ability to penetrate far deeper into the enemy's positions than any infantry scouting detail could."

Remarking that even heavily held sectors are not proof against Red cavalry penetrations, he decribes one guerilla-like operation in which a large cavalry formation was ordered to break through to the Germans' rear and straddle and disorganize their communications. The operation was preceded by several days' scouting afoot by cavalrymen probing the mine fields and other defenses. Then they slipped through one night as a mounted force.

After locating the enemy's main concentrations and headquarters and radioing the information to their command, the scouts conducted a raid on the enemy headquarters as British Commandos do. The operation was successfully carried out on foot with machine guns and hand grenades. Then the Cossacks remounted and returned to their own lines without a single casualty.

★Moscow correspondent of the *New York Times*.

[1]See "Encirclement at Stalingrad," page 38 this issue.

al War Role

by Cyrus L. Sulzberger*

Other operations of similar type have been reported in which mounted machine gunners and mounted sappers—both pertaining to cavalry units—have conducted raids deep in enemy territory and blown up bridges and railway communications. In some instance such raiding forces have taken along artillery as well as small arms.

New Organization and Modern Weapons

Since the start of the war, many new weapons have been distributed wholesale among cavalrymen. These include thousands of tommy guns, many of them American models. The cavalry has received quantities of heavy machine guns and automatic rifles similar to the American Garand. Also in use are vast quantities of *"tachanka"* carts, drawn by three horses and bearing machine guns.

One thing that has greatly improved the power of Red cavalry is the widespread introduction of antitank guns, both heavy and light. The latter type—long-barreled antitank rifles—are carried by horsemen in the same fashion as the old lance. Sometimes there is confusion among persons seeing the Red cavalry from afar or in newsreels. Other antitank weapons used are the 37mm, the 45mm, and the new 50mm guns mounted on wheels.

Cossacks Still Heart of Cavalry

The heart of the cavalry is composed of the famous Cossacks of the Kuban and the Don, but it includes many horsemen from the eastern Soviet republics. The cavalrymen's eastern ponies of Mongol type are tough, stocky horses that can endure much hardship. The ordinary Russian and Cossack stock has Arabian blood in it. When necessary, both types of horses can live off the country for long stretches, except when the ground is covered by snow.[2]

Red cavalry remains a separate force, well handled generally and used en masse only in winter and at the right tactical moment. The old cavalry, hampered by horse-drawn baggage trains, has been largely eliminated by the gradual introduction of motor transport. Today, within a range of 150 miles, it can be just as mobile as any other troops, thanks to trucks. This new tactical mobility is a big advantage.

[2]See "The Campaign Horse," May-June, 1943, issue, The Cavalry Journal.

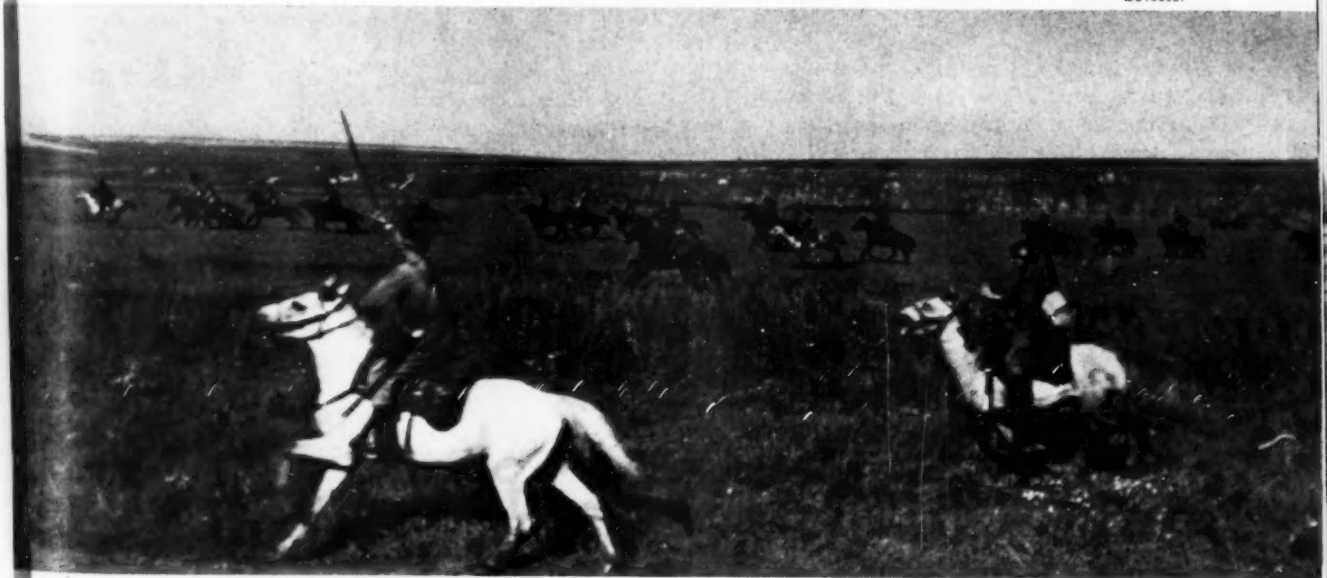
EDITOR'S NOTE

This excellent article on Red Army cavalry has been compiled from two press releases, wirelessed by Mr. Sulzberger from Moscow to the **New York Times** ***(June 14 and 15, 1943), with whose gracious permission the combined material is reprinted here.***

Mr. Sulzberger has represented the **New York Times** ***in Russia since July, 1941. His observations and keen analyses of the phenomenal rôle of cavalry in the successes of the Soviet fighting machine are a valuable contribution to the annals of modern war.***

Cossacks attack in the area west of the Don. Such attacks are often supported by tanks and air power.

Sovfoto.



Employ

A Cossack antitank crew on the move. Note long barrel antitank rifle.

Although the modern Cossack may also be a mine layer, an artilleryman or an antitank gunner, he is still an incomparable scout. This picture shows a Cossack patrol setting out on reconnaissance.

by

Colonel General O. Gorodovikov

THE domination of the motor in modern war, the development of aviation and mechanized forces, and the increased fire power of all arms, naturally have affected considerably the tactics of cavalry and the methods of its employment in battle. To a certain extent, cavalry lost its operative independence. Still, as the progress of the war has shown, it continues to play a prominent and important rôle on the battlefield.

Independent Missions

In the past, large formations of cavalry carried out operative assignments independently. Often it broke away from its main force as far as sixty to seventy-five miles and raided the enemy's rear for days, and sometimes for weeks. Now, to gain the greatest amount of success, cavalry fights in constant contact with other troops in a combined frontal effort. Usually, cavalry is thrown forward to distances of twenty-five to thirty miles, to strike the flanks or the rear of the enemy. Good examples of these tactics are the actions of the large cavalry formations of Generals Bolov, Dovator, Kruichenkin, and Kirichenko.

It is possible sometimes for large cavalry formations to carry out independent operations even farther away from the main forces; but in such cases, cavalry must be heavily reinforced by other arms—motorized infantry, tanks, artillery and aviation. In the absence of such reinforcements, there must be a certainty that the enemy is sufficiently disorganized and unable to maintain a stubborn and well-knit defense.

The experience of past wars has shown that the main tactical principle in the employment of cavalry should be *the use of large formations for massive blows at the enemy*. This has been confirmed by the experience of the present war. In its first period, we had several examples of simultaneous employment of large cavalry formations on one hand, and of separate cavalry divisions on the other—divisions frequently lacking in fire power and team work.

Sometimes these divisions were given to army corps or army commanders to carry out assignments of secondary importance, such as protecting the flanks and providing security measures on some sectors or directions. This method of using cavalry seldom if ever brought positive results. Scattered cavalry quickly lost its hitting and staying power. Even in the initial period of the present war, it became clear that the only correct employment of cavalry is the use of large formations, reinforced by combat teams of all arms.

Frontal Attack in Coördinated Action

In offensive operations, these formations are most effectively used on the flanks for a blow at the enemy's main group, with a view to penetrating into his depth up to thirty miles. A close coördination with other arms

★Translated from *The Red Star* by Nicholas Corotneff.

...nent of Cavalry in Battle*

engaged in the frontal offensive is absolutely necessary. The general idea of such tactical teamwork is to strike simultaneous blows from different directions. Examples of successful actions of this kind are the offensives of General Belov's corps from Kashira to Stalinogorsk, and General Kruichenkin's corps from the area of Kastornaya to Livni and Rossosh. By these blows, the main groupings of the enemy were shaken, rear organizations and ground centers disrupted, and the advance of our forces engaged in the frontal assault was greatly facilitated. Eventually, by combined efforts, the main German group was annihilated. In both instances, cavalry actions were continuously coördinated with the frontal advance of our troops. This was the most important factor for insuring success.

After the hostile defense is broken through by the infantry, the success is best developed by throwing into the gap a powerful mobile group of cavalry and mechanized forces. The battle in the depth of the enemy's defense must be planned so that the contact and coördination of the mobile group with the elements engaged in the frontal advance is continuous and uninterrupted. Practice shows that mobile groups which lose this contact are usually unable to achieve tactical success.

The break-through should be from nine to twelve miles wide, and after cavalry and mobile groups move in, the elements engaged in the frontal advance should strive to widen the gap and to repulse the enemy's counterattacks from the flanks.

It is one of the most important duties of the command to see that cavalry groups going into the break-through should be reinforced adequately by antiaircraft defense and units of engineers. Care should be taken to insure the flow of supplies and matériel, and the maintenance of liaison with the rear. To leave the advancing mobile groups without ammunition, food, or fuel is to doom them to destruction. To rely on local supplies only is out of the question.

Mobile Reserve

In long drawn out and stabilized defense operations, cavalry is best employed as a mobile reserve of the front commander. Together with other reserves, it may be thrown into action to liquidate the enemy's hostile forces which succeed in breaking through, or it may be kept on hand for future offensives. In the First World War, cavalry was successfully used in this fashion on several occasions. Similar examples can be found in the present war. In the summer of 1941, when the Germans broke through at Pervomaisk, the Second Cavalry Corps rushed from another sector, made a sixty mile march, and struck the advancing Germans a surprise blow of such power that their drive was checked at once and then turned back at Balta. Another excellent piece of work was a similar action of General Dovator's cavalry corps in the approaches to Moscow.

In a maneuvering defense Cavalry fights for important boundaries, protects the flanks of the armies, and covers important operative directions.

During the 1942 summer campaign on the southern front, the Cossack corps of General Kirichenko gave a brilliant example of well organized and active maneuvering defense. Skilfully combining a stubborn defense with bold and determined counterattacks, the Cossacks not only succeeded in checking the enemy on the boundaries held, but inflicted heavy casualties and captured booty and prisoners. The Cossacks fought under adverse conditions and against a numerically superior enemy. In these engagements, cavalry once more proved its ability to fight successfully against mechanized forces.

In every engagement, cavalry must preserve its mobility. This mobility is greatly impaired when cavalry fights in a frontal line with other troops. A frontal

Cossack machine gunners move to a new position on foot. Cossacks often fight dismounted. These are identified by their uniforms.

command which puts cavalry into the line deprives itself of mobile reserves capable of executing a swift maneuver, often necessary to liquidate a break-through or to switch to the offensive on some sectors of the front.

In the course of successful development of large offensive operations, cavalry can be used to create an advantage for the pursuit and annihilation of the retreating enemy. Instances are known, however, when under such circumstances, cavalry commanders, carried away by their enthusiasm in pursuing the enemy, did break away from the main advancing group, which could not keep pace with them. As a result, the coördination was disrupted, the pursuit gradually died down, and some cavalry units found themselves in a critical situation.

Maneuverability Aids Surprise Actions

The present war abounds in examples of successful use of cavalry in the enemy's rear. This method of using cavalry necessitates its equipment with special technical means and matériel. The trains must be light and cut down to a minimum; mortar and automatic arms greatly increased.

Cavalry units are not tied down to specific areas and inhabited points. Flexibility and concealment in maneuvering are most important because this enables them to surprise the enemy and appear unexpectedly to strike at his most vulnerable spots. Surprise actions, especially night raids and ambushes, are the basic methods of fighting in the enemy's rear.

To choose the best and most advantageous direction for penetration to the main objective often decides the success of an operation. In this respect, engagements of General Kruichenkin's cavalry corps in the operations of Eletz are most interesting. The cavalry went into action on the sector where the Germans had rather weak forces, and had no fortified positions. This insured a complete freedom of maneuver. The corps had no difficulty in penetrating into the rear, and thus its mission in the first stage of the operation was successfully fulfilled. At the next stage, the cavalry became engaged in a thickly populated area where numerous inhabited points were solidly fortified and held by substantial hostile forces. The maneuvering ability of the cavalry units thus was cramped and the corps became involved in a series of indecisive actions, tied down to the same area for several days.

Both Mounted and Dismounted Action

It must be taken into consideration that, if in former times cavalrymen went into action mostly in mounted formation with a cavalry charge as an ultimate objective, now they maneuver on horse, but fight, as a rule, in dismounted formations. This does not mean that bold cavalry charges, swift and unexpected, have become impossible. When the enemy is taken by surprise, when his fire system is not yet organized or is already disrupted, when the enemy is demoralized by our fire and held by frontal actions of infantry and dismounted cavalry, then cavalry can and must charge daringly and, supported by tanks, aviation and artillery, must annihilate the enemy by fire and saber.

The Guard Cossack Division commanded by Major General Toutarinoff was assigned to hold an important defensive boundary. The advancing Germans had considerable numerical superiority. Discovering the junction between the advancing German units, during the night the Cossacks left a small covering force, on the front, while the main striking force of the division penetrated into the rear of the enemy's main group. At dawn, they went into a dashing cavalry charge, cut off the German infantry from their tanks, and, supported by our other units, they completely smashed a (SS) unit and a fourth regiment of mountain rifles. Three thousand German officers and soldiers were killed in the charge.

Many other examples of skilful cavalry charges were made by General Kirichenko's forces in the fighting on the Southern Front. Several times the Cossacks cut their way through the enemy's formations and inflicted heavy casualties. This shows how important it is to combine skilfully the fighting on foot with cavalry charges, and to be able to switch quickly from one to the other. This is one of the most important secrets of successful cavalry leadership on the battlefield.

Conclusion

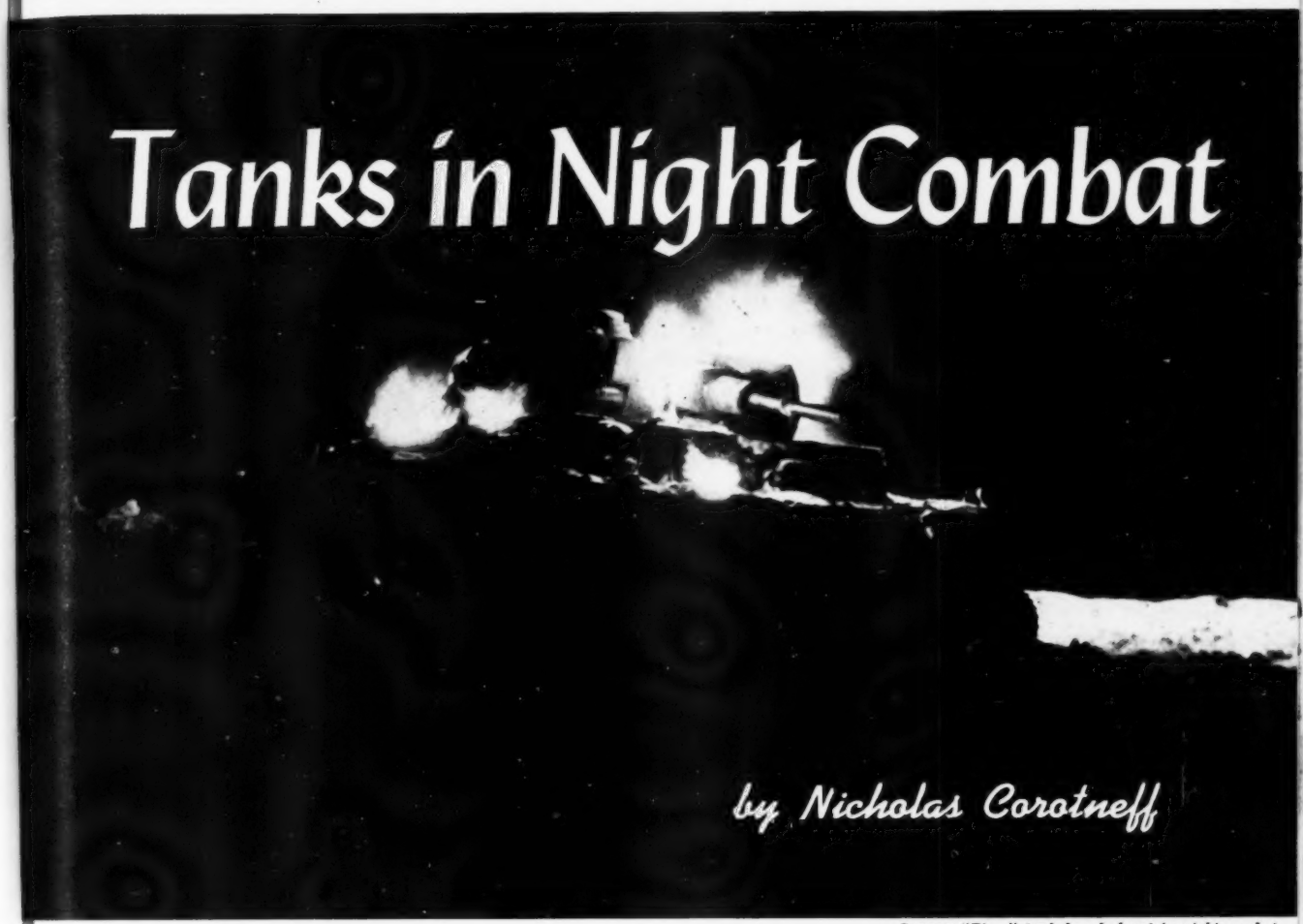
In engagements of a maneuvering character, the mobility of cavalry must be exploited fully with a view to striking surprise blows at the most vulnerable spots. For instance, it always brings good results, after breaking off the battle suddenly in one sector, to regroup the cavalry under the cover of darkness in an area eight to ten miles away, and then strike quickly an unexpected blow on the enemy's flank from a new direction.

Experience shows that the main forces of large cavalry formations should not become entangled in long drawn out engagements in the same sector, as this paralyzes its mobile power and dooms it to tactically passive actions.

Security in general, and antiaircraft defense in particular, is of especial importance for cavalry. Its most dangerous enemy is hostile aviation, especially in an open country. Cavalry must be trained in the use of every possible method of concealment, and should be able also to disperse quickly. When the enemy's aviation attacks cavalry on the march, all means of fire power, antiaircraft guns, machine guns, antitank rifles, and rifles must be used fully.

As far as antitank defense is concerned, the experience of the latest campaigns shows once more that even with their own means only, cavalrymen can successfully repulse motorized attacks if such means are skilfully used. If the cavalry is reinforced by tank units and artillery, it is capable of striking very telling blows to stop the enemy's advance, and hurl it back.

Tanks in Night Combat



by Nicholas Corotneff

German "Tiger" tank knocked out in night combat.

FOR years before the war, one of the most controversial questions of the mechanized tactics of the Red Army, endlessly discussed and argued about, was the question of the feasibility of using tanks in night action.

The majority of officers of the mechanized forces steadfastly maintained that the use of tanks in night combat was extremely dangerous and that, great as its moral effect on the enemy might be, it was more likely to lead to a disaster than to success. As one of the Russian tank commanders put it—"A tank in night combat has no more chance than a blind man in a street brawl."

The difficulties of mechanized operations in darkness, or under conditions of poor visibility, are, naturally, obvious. On the other hand, many tank units in the Red Army, over a period of years, conducted tests and experiments to show the possibility of successful tactical operations by mechanized units at night.

Probably the most painstaking and successful experimentation was carried on by the Siberian Army, or as it is officially called, the Far Eastern Red Banner Army. Their tank formations were almost exclusively recruited from local inhabitants—nearly all of them experienced hunters and trappers—who felt perfectly at home in the Siberian wilderness under any weather conditions and at any time of day or night. Night drills and maneuvers were widespread in Siberian tank units and their drivers accumulated vast experience in night movements across the country.

This experience proved to be an invaluable asset in several engagements which these tank units fought with the Japanese during the so-called "border war" of 1938-39, following the occupation of Manchukuo by Japan. Some of these actions were mere skirmishes; some, pitched battles involving divisions and army corps. Officially, all of them, however, were classified as "border incidents."

The most important of these "incidents" was fought on the river of Khalkin-Gol, near the Mongol-Manchukuo border, August 20-28th, 1939. The Japanese who were decisively beaten, lost 18,000 men killed and wounded and a large amount of matériel. To a great extent the Russian success was due to their mechanized units. According to orthodox logistics, these units, being several hundred miles away in the Chita district, could not possibly get to Khalkin-Gol in time. Siberian logistics, however, proved to be quite unorthodox. They were based on day and night marches, over a most difficult country—marches which the Japanese considered unfeasible. The appearance of the Russian tanks on the battlefield in large numbers came as a complete surprise to the Japanese command, and contributed greatly to the Russian victory.

However, successful as some of these experiments

were, they failed to convince the majority. Army regulations pertaining to mechanized operations—stressing the importance of developing the ability to execute long marches and movements at night, with and without lights—practically left out tactical operations by dismissing them with a few vague generalities.

In 1934, a remarkable treatise on mechanized warfare was published in Germany by a former Austrian Artillery General, Ritter von Eimannsberger, under the title of, "The Tank War." It made a great impression both in German and Russian military circles and, to a certain extent, considerably influenced the development of mechanized doctrine. Eimannsberger's influence, however, was more organizational than tactical. His tables of organization for panzer divisions no doubt played a considerable rôle in the final makeup of these divisions which emerged on Poland in 1939. With a few deviations, their elements bore a striking resemblance to Eimannsberger's blueprints.

Eimannsberger also laid the groundwork for the modern antitank defense, although, naturally, at that time the concept of antitank defense was purely along artillery lines. The possibility of fighting tanks with close combat weapons was not even considered. The Spanish Civil War brought the first pioneer efforts in this field.

On the other hand, the tactical views presented by Eimannsberger were unanimously rejected by the German tank experts. He failed completely to grasp the most important principle underlying the *blitzkrieg* tactics, which is a battle, or rather, a series of battles, on a narrow front, each one devised so that the full weight of the armor could be concentrated against a weak spot in the enemy's defense and just as quickly changed to another spot if the resistance at the original point of thrust proved to be unexpectedly strong. Fluidity and flexibility in a tactical sense, combined with the idea of encircling the enemy by means of two or more converging attacks, can be called the essence of the *blitzkrieg*.

Eimannsberger's battle is titanic in scope, but hidebound and pedestrian in its tactical and operative concepts. In his blueprint of a great tank battle of the future, he concentrates 5,000 tanks in the break-through echelons alone, with many more in the exploitation force, followed by 10 to 20 motorized divisions. All this takes place on a front 20 to 30 miles wide and is conceived as an operation on diverging lines. In other words, it is just a mechanized version of the great artillery break-through attempts of the First World War. In his description of this battle of the future, Eimannsberger confronts his supreme commander with the necessity of quickly solving two vitally important problems which come up just before and during the battle. A dense fog hangs over the battlefield on the morning of the break-through when all the preparations are made and his thundering torrent of steel and fire is about to deluge the enemy's line. Should he go through with the attack, or wait for the fog to lift? Unhesitatingly, he decides to wait; and the greatest mechanized army ever assembled – in human imagination – remains in frozen immobility for almost three hours until the fog lifts completely.

The break-through is a complete success. Motorized divisions begin to pour into the gap made by the giant battering ram.

The battle, delayed by the fog, rages all day. Darkness falls over the battlefield, and the forward echelons of panzers, far behind the smashed lines, are fanning out and completing the rout. What shall the commander do—order them to keep on going, or stop them until daylight? He decides upon the latter, and the pursuit is stopped entirely all over the battlefield until the next morning.

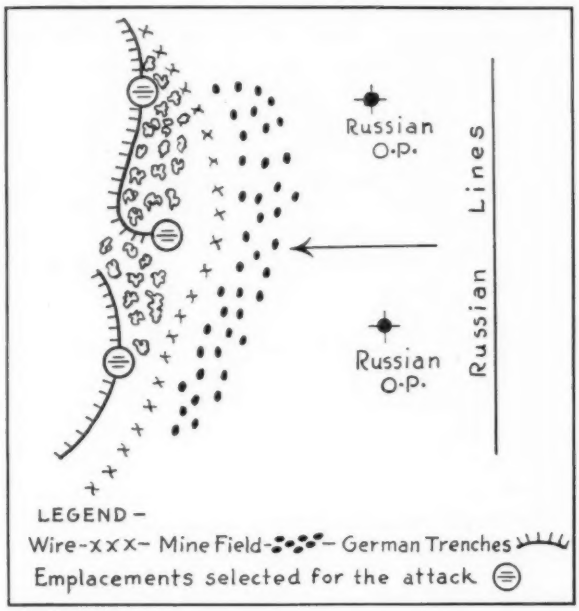
Eimannsberger's description is characteristic of the viewpoint that prevailed in his time in both the German and Russian Armies. He has no doubts or hesitations in gambling his huge tank force on one stake and cheerfully disregards the fact that in case of failure, his mechanized hordes could not be disengaged without courting total disaster. He boldly puts all his eggs in one giant basket. But he is convinced that darkness or fog are insuperable handicaps for tanks and there is no use of taking any chances.

Eimannsberger's book, translated into Russian in 1936, sold over 60,000 copies and was much discussed in the Red Army. Several of his ideas on the organization of antitank defense were carefully noted by the Soviet High Command and, to a certain extent, reflected in the Field Service Regulations of 1936, which were still valid when the Red Army started to the war. There is no doubt that the prejudice against the use of tanks at night was also strengthened by his book's influence.

The beginning of the war, apparently, saw no changes in this viewpoint. At least no reports of mechanized night operations in 1941 are available.

Beginning from the summer of 1942, however, a definite change in the Russian attitude seems to have taken place. The question of mechanized night actions has been reconsidered in the light of the actual war experience and the tremendous development of night combat in general. The trend now is in favor of using tanks at night extensively and exploiting to the full the overwhelming element of surprise inherent in the mechanized attack in darkness. The time when tanks operated only between daybreak and sundown is definitely past.

The first night actions we know of bear the earmarks of careful, well planned experimentations. They are laboratory tests laying the preliminary groundwork for bigger operations to come. It is also interesting to note that, as far as we know, these actions were carried out on almost every front, except the Stalingrad sector where, in November, the great break-through took place. Apparently, on this front, the Russian High Command was bent on building the element of surprise to its greatest possible extent and did not want to put



the Germans on the alert by giving them a foretaste of the new mechanized tactics to come.

In the change of attitude on the question of employing tanks in night combat, one factor, undoubtedly, played a considerable rôle. The great difficulties attending the operation of tanks in darkness were even increased in the Red Army. The main stumbling block of night operations—the difficulty of keeping on the course and locating targets—was rendered even more difficult by the inadequacy of Soviet radio equipment. At the beginning of the war, it proved to be one of the main technical weaknesses of the Russian Army. Radio equipment was insufficient in quantity, and a great many commanders were completely unfamiliar with it. Therefore, they were sometimes reluctant to use it even when it was put at their disposal.

Only the minority of Soviet tank formations were equipped with radio sets in 1941. In the units assigned to work with infantry, even tanks of company and battalion commanders often lacked them, and only in the summer of 1942 was this deficiency gradually eliminated.

By the beginning of the 1942 winter offensive, all independent tank formations were equipped with radio sets. Still, the reform was not complete. As late as in November and December of last year, several reports in the military press clearly indicated that many infantry tanks still operated by visual and sound liaison alone. For instance, in one report describing the combined operation of infantry and tanks, the failure of the latter to execute their mission is traced to the fact that it took the tank battalion commander 45 minutes to transmit his orders from his advanced O.P. to his companies a few thousand yards behind. It is clear how the element of chance is increased at night under such conditions.

Following are translations of two accounts dealing with these first experimental night actions, with strictly limited objectives:

I. A Trench Raid

On one sector of the Western Front, several Russian attempts to capture prisoners for purposes of information (called in the Red Army, "control prisoners," or "tongues") failed consistently. The German defense lines were strongly fortified, extensively wired, and had mine fields in front of them everywhere. Their troops were alert, and an excellent system of sound and light signals spread the alarm all along the line as soon as one of the Russian raiding parties approached. It was decided to try a new expedient—a trench raid by a tank landing party. This method promised the benefits of a completely unexpected blow whose moral effect was likely to be stunning.

The drawbacks, on the other hand, were equally obvious. To drive a tank in darkness through a mine field and aim at one particular spot in the enemy's line was no easy matter, and a most careful preparation was needed to insure the success.

After a study of the terrain and the enemy's forward line, the objective for the raid was selected—a machine gun emplacement, with a shelter for the crew, sited on the skirt of a small wood in front of the German trench lines. A continuous day and night observation was established from two points. Officers in charge of the preparations supervised the two scout pairs and paid them frequent visits. The carefully kept logs were collated each day, and the officer in charge of the raid spent a great deal of time at both O.P.s.

It was established that the garrison consisted of five Germans. Usually only one of them stayed at the machine gun; the rest, except for the usual occasional errands, stayed in or behind the shelter. The latter was well built and equipped with a stove, which the Germans kept going all night from dusk until dawn. Behind the shelter a deep trench running to the north, connected the emplacement with the rest of the defense system. There was no trench to the south, which led the Russians to believe that the emplacement was a junction between two separate units. (See map.)

It was observed that shortly before 19:00 o'clock all of the Germans invariably gathered in the shelter and stayed inside for some time, apparently enjoying their supper. It was decided to make the raid at this time. It was the darkest hour of the evening, and the raiders could be sure of finding everyone at home.

Two tanks were assigned to the action, and a landing party formed of eight picked men, all experienced in scouting and close combat. Then preparations for the raid started.

Reconnaissance parties of engineers covered by infantry scouts spent three nights establishing the exact location of the mine fields in front of the enemy and de-mining them. On the last night the engineers were

joined by tankmen who went carefully over the proposed route of the raid, studied the landmarks which could guide them in the dark and made a detailed map. They also spent a whole day at the O.P.s studying the objective and the Germans' everyday routine.

In the meanwhile, preparations went on in the rear also. There, a section of the terrain was selected similar to the one to be attacked and a replica of the emplacement, shelter, and part of the trench was built. Then a painstaking training of the tank crews and landing party began. Every stage of the operation was gone over and over again—mounting, dismounting, the dash across No Man's Land, assaulting the shelter, mounting again, and then the final dash down the home stretch. The signal system was gone over till every participant knew it by heart. Finally, as each stage of the operation was worked out to perfection, a dress rehearsal with live ammunition and grenade-throwing, took place on the last day.

On the day before the raid, the battery commanders and the commanders of the mortar units were summoned to the observation point. They were shown the targets which they had to suppress before the raid and were made to study the time-table and system of signals to be employed during the operation.

As the result of all these activities, the plan of the raid, containing detailed instructions for all participants, gradually fattened and grew to the size of a miniature manual. Here is the outline of the plan: The opening signal, "series of red rockets," would be fired from the company's C.P.; then the supporting artillery, reinforced by two companies of 80 millimeter mortars, would open a 3-minute barrage on designated targets to the right and to the left of the objective. At the same time, one tank with a landing party would rush toward the objective at full speed, while the other tank would follow behind to a landmark approximately half the way across and would stay there to support the attacking tank, if needed. The landing party would assault the shelter, capture the "tongue," fire the signal, "series of green rockets," and retreat to the tank. At this moment, artillery and mortars would open another barrage. This time, a part of them would fire at the same targets, while the other part transferred its fire to the depth of the German defense. On their way home, the tanks were to be guided through the mine field by two lighted torches placed at the end of the mine-free corridor the minute the second barrage was opened.

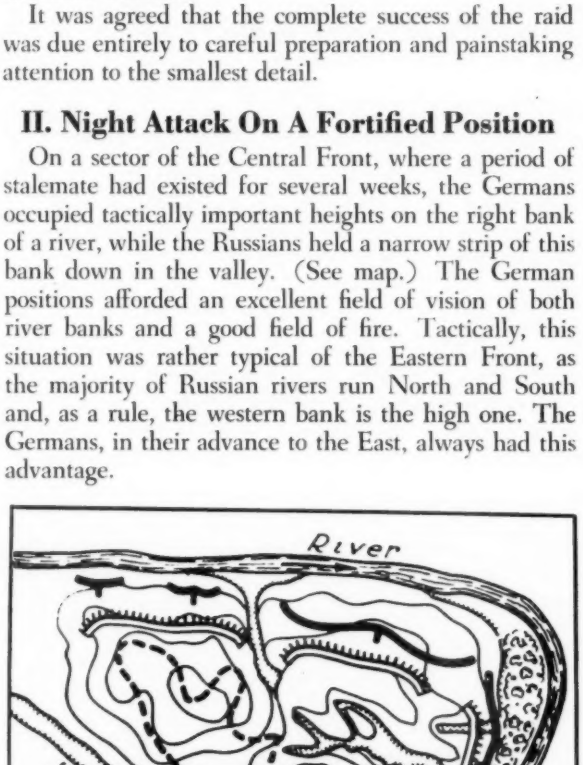
Everything went "according to plan" and fell only one minute behind shedule. The forward tank crossed No Man's Land and reached the objective in 1 minute, 30 seconds. A hail of hand grenades fell upon supping Germans. The first one to rush out (a corporal) was captured. The rest of the post was wiped out. The whole operation took exactly 15 minutes. The Germans were completely overwhelmed by the surprise and swiftness of the assault.

German Artillery opened up a minute after the landing party returned. After that, apparently anticipating a large scale Russian attack, they kept up an intensive fire in which all weapons joined all along the sector for almost 20 minutes. No casualties were inflicted by this belated retaliation which, in fact, proved rather helpful in establishing the German fire system in greater detail than had been known before. The landing party had two men wounded.

It was agreed that the complete success of the raid was due entirely to careful preparation and painstaking attention to the smallest detail.

II. Night Attack On A Fortified Position

On a sector of the Central Front, where a period of stalemate had existed for several weeks, the Germans occupied tactically important heights on the right bank of a river, while the Russians held a narrow strip of this bank down in the valley. (See map.) The German positions afforded an excellent field of vision of both river banks and a good field of fire. Tactically, this situation was rather typical of the Eastern Front, as the majority of Russian rivers run North and South and, as a rule, the western bank is the high one. The Germans, in their advance to the East, always had this advantage.



Several times the Russians tried to break this stalemate, but every attempt to take the height was repulsed. The Russian Command finally decided to try a night attack in which tanks participated. At night a tank unit was ferried across and concealed in the woods in the bend of the river. (See map.) As usual, in Russian accounts, the size of the unit is not specified, but judging from the description of the action, it can be assumed to have been a battalion.

All of the next day was spent in studying the terrain to determine the battle course for the tanks, organizing

the liaison and the signal system, and perfecting the plan of coördination between the different arms assigned to the action. In determining the best course of attack for the tanks, the morale factor was considered to be of prime importance. In order to enhance the element of surprise and confusion which, in the estimation of the Russian Command, the unexpected night attack by tanks was likely to create, it was decided to launch them on a wide-sweeping curve to the south and southwest to create the impression in the minds of the defenders that they were being encircled by large mechanized forces.

The tanks were deeply echeloned. The first echelon consisted of heavy tanks; the second, of light tanks with landing parties of 4 to 5 tommy-gunners on each. The tanks of the third echelon had infantry guns and antitank guns in tow. Their gun crews mounted the tanks. Shells were also carried on the tanks.

Before the attack, the Russian artillery opened a barrage at the forward edge of the German defense, and the fire then gradually crept into the depth and covered the possible roads of retreat. The signal for opening the barrage was given 30 minutes before darkness fell. This was considered to be just sufficient time for the tank echelons to pull out of the wood, reach the departure line of the infantry units, and take their place in the van of the attack.

A full moon facilitated the movement of the tanks. As soon as they reached their assigned place in front of the infantry, they opened up with all weapons. Outside of firing at the flashes of German guns, they were also helped by the light signals of the infantry which designated some of the targets.

Unfortunately, the Russian account[1] is somewhat vague as to the course of the battle. It states: "Pressed simultaneously from the front and the flanks, the Germans started a hasty withdrawal. The infantry following the tanks destroyed the retreating enemy and his fire means. The German artillery kept up a disorganized, unaimed fire, sometimes firing at their own infantry. Not a single tank was hit." Immediately after, however, the account states that the battle lasted for four hours until finally the tanks and the infantry gained complete possession of the heights. After that, ". . . the tanks maneuvered along the south and southwest slopes of the heights to give the infantry the opportunity of consolidating and fortifying the newly-won positions."

Apparently, the German retreat was not so panicky after all, as four hours seem a rather long time for a "local withdrawal"; and the cruising of the tanks after the battle tends to show that the Russian Command expected immediate counterattacks. These attacks, as the account itself reveals later on, did in fact materialize, were numerous and are described as varying in strength, sometimes up to a regiment. It seems, however, that they came after a considerable interval, possibly even the next day. All of them were repulsed.

Apparently, tanks did not participate in these subsequent actions. They retired to the woods for refueling and replenishing ammunition after it became clear that the position was securely held. They found there a maintenance detachment and supply trucks which had been ferried across the river while the action was in progress. The account states that the Germans left several hundred dead on the battlefield and a great deal of equipment. Prisoners (whose numbers are not specified) stated that "the attack was completely unexpected, and the surprise was over-whelming. The Germans thought they were completely encircled, and whole units became disorganized and took to flight."

Russian casualties are not mentioned, except for the fact that no tanks were disabled.

Vague as the account is, there seems to be no doubt that a decisive tactical success was attained; that the use of mechanized forces was the factor that insured it and thus broke the stalemate which repeated infantry attacks along more standardized lines had failed previously to achieve.

It is also stated that in the ensuing days, several similar attacks were made on this and several other sectors of the front and that all of them were successful and achieved results with negligible tank casualties.

The experience of these actions leads the Soviet reviewers to the following conclusions:

(1) Night attacks should be staged on moonlit nights when it is easier for tanks, as well as for infantry, to orient themselves and when the latter can help the tanks to locate targets and keep on the right course.

(2) Tanks should be deeply echeloned. Movement on a narrow front is not only easier in darkness, but creates in the mind of the enemy the impression of a great concentration, as they cannot estimate the number of tanks employed as easily as they can when dealing with a linear formation.

(3) Upon reaching the final boundaries of the attack, the tanks should not stop, but should continue to cruise around occupied positions to give the infantry the necessary time to consolidate.

(4) In night action, tanks need the assistance of infantry much more than in the daytime. Therefore, they should stay with the infantry throughout the engagement and, under no conditions, break away from it.

These two accounts illustrate how the first experiments, involving the new tactics of mechanized operations around the clock, were carried out.

From such unfortunately meager material as is available, it seems evident that lessons learned from such experiments as these were later applied in the great Stalingrad offensive, where tanks in night combat played a most important and decisive rôle.

[1]Written jointly by Major Jeguillo and Major Katzenelson.

German Aerial Recon

EVERYTHING that will shorten the time required for reconnaissance and preparation must be utilized. The aerial photograph is one of these things. It can be of great assistance to the commander of troops. It shows changes that have been produced in the surface of the terrain, either by nature or by the enemy, in time of war or peace, that are not or cannot be shown on the map made earlier. . . . Poor and old maps especially need such supplementary information. But if there are no maps of the proper scale available, then it is only the aerial photograph that can be had in relatively short time to take its place.

Hence, generally speaking, the aerial photograph possesses the valuable characteristic of being able to supplement and, in exceptional instances, to replace the map. Reconnaissance by means of aerial photography offers itself as a supplement to or substitute for ground reconnaissance. As a rule, aerial reconnaissance by means of photographs will be possible at a time when ground reconnaissance is out of the question, and on the basis of it, certain measures can be taken at a very early point in the operations. This early information may later be supplemented by ground reconnaissance.

It might also happen that a considerable number of reconnaissance missions would have to be started at the same time. In this case a previous division of effort into aerial photographic and ground reconnaissance will be advantageous, or in all instances, previous reconnaissance by means of aerial photography may be carried out and then after the elimination of the cases in which the aerial photograph suffices, the principal terrain to be covered by ground reconnaissance may be chosen. There is always, however, a gain of time and a saving of forces—factors that are particularly important. . . .

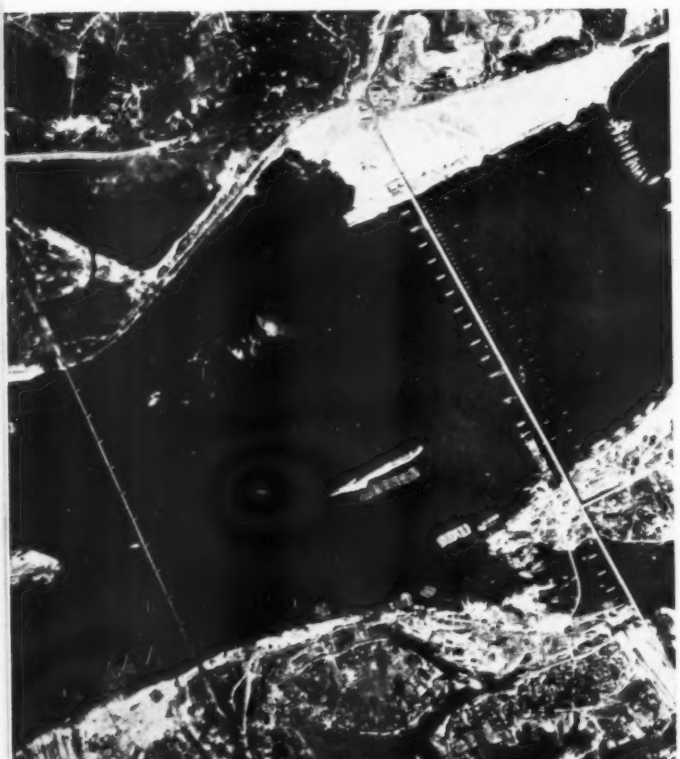
The advantage of aerial photographic reconnaissance in comparison with ground reconnaissance, lies mainly in the rapidity and timeliness with which it can be carried out within the limitation set by the type of plane used, and the distance at which the object to be photographed is situated. (Among other things, it may still be in the hands of the enemy.) But aerial photographic reconnaissance also has its limitations. It is well to have a clear idea of what may be expected of it and what must be left to ground reconnaissance.

In Connection With Battles for Rivers

We shall now consider in detail these limitations as far as they affect reconnaissance. As a river sector is approached, the commander will desire to know at an early moment whether any bridges exist or whether known bridges are still intact; which bridges are destroyed and the nature and extent of damage that may have been done to them; and the location of suitable bridge and crossing sites. The presence or absence of bridges can be told from the aerial photograph, as well as the extent of the damage in case the bridges have been blown up, especially when the photographs are taken at a sloping angle or when shadows are being cast from directly above the object. In both cases, the construction of the bridges and the absence of important works, particularly piers, is to be noted so that from this the type of repairs to be made may be considered, the material and labor that is going to be required calculated, and march and transportation movements initiated.

The aerial photograph also gives us information concerning the width of a river, the level of the water, the bank characteristics, possibilities for cover, the routes leading to and from a position, stores of construction

★Translated at the Command and General Staff School, Fort Leavenworth, Kansas, from a German article by Colonel Rossmann in *Militär-Wochenblatt* October 16, 1942.



Black Star

This German photo shows an interesting view of Kiev, the capital of the Ukraine. In addition to the road bridge across the Dnieper, there can be seen preparatory works for another road bridge, also a ponton bridge in construction.

naissance ★

material, etc. *On the other hand, any information regarding the velocity of the stream, depth, nature of the bottom, and the load capacity or preparations that have been made for the destruction of a bridge is not available from an aerial photograph.*

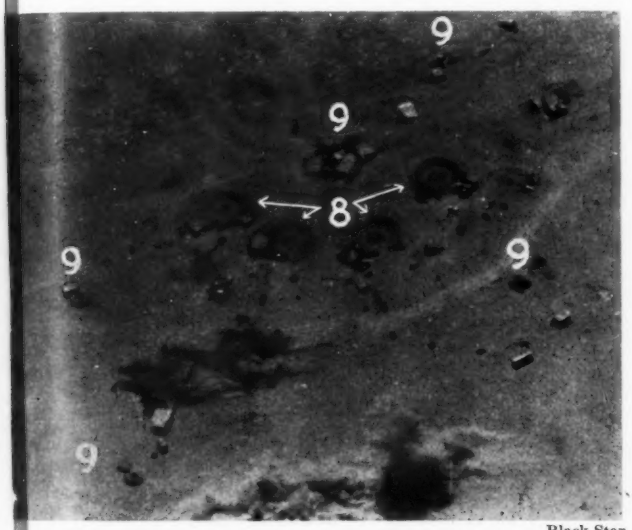
Barricades and Highways

Also in battle at barricades and on highways, aerial photographic reconnaissance comes to the aid of the commander since, in choosing highways for the advance of the troops or for supply columns, those that show the least and most easily passable barricades may be chosen in advance.

It is also easier to find in the aerial photograph opportunities for circumventing these barricades. Discernible in an aerial photograph are nearly all types of obstacles such as shell craters, mountain roads on steep slopes that have been blown up, tree-trunk barricades, concrete walls, obstructions in streets caused by the debris of wrecked houses, road blocks, etc., *but not, however, mines planted on highways, or mine fields forming obstructions which bar progress over the terrain.* Other terrain obstacles such as concertina type entanglements, stake barricades, antitank ditches, inundation, are usually not difficult to detect.

Most of these terrain obstacles are built in connection with field or permanent fortifications. The course followed by the obstacles gives a clue to the location of the fortifications. Paths made over the ground by persons on foot, and cable trenches poorly grown over by grass offer further clues. Also, such centers of resistance as bunkers, fortifications, battery positions, etc. are more or less easily recognized in an aerial photograph. This depends on the degree to which they are camouflaged and the thoroughness of the work.

Bicycle reconnaissance troops are greatly limited in their ground reconnaissance by distance and the situation of the enemy—factors which do not affect aerial reconnaissance.



Black Star

This German reconnaissance photo, received from neutral sources, shows English antiaircraft defense before Tobruk. Ramparts of sandbags three meters thick (8) and light antiaircraft guns (9) protect the heavy antiaircraft batteries. The German caption on this picture says that a few days after this air survey, some direct hits were made on this position and all guns were silenced.

Press Association

Pictures of London taken from German long distance reconnaissance planes, are studied by these German airmen. Film is spread out of doors for drying prior to picking out the best film for reproduction.

Conclusion

Hence we see that in preparation for the advance and the attack, aerial photographic reconnaissance is an almost indispensable help. We should not forget to make use of it in defense, as well. An examination of our own camouflage measures, especially those protecting our fortifications, is certainly profitable. The preparations and assembly points for attack over defended water courses and on our own obstacles and positions, can be recognized by the enemy at an early stage and he may take measures against them.

This German officer sitting before a special apparatus is making practical use of the photos taken by reconnaissance planes over enemy territory.

Press Association

A Panoramic Impression of a German Panzer Division Moving Into Action, 1940*

Drawing by Captain Bryan de Grineau

ONE of the gravest errors ever made by our (British) War Office was the neglect of tanks, whose force and power were only tardily recognized when the Germans released their full fury against the Low Countries, although many years ago we worked out effective schemes of attack with fast moving tanks combined with close-support aircraft.

The Germans built up a force of some fifteen armored divisions, each consisting of about 400 tanks of mixed types, with accessory units. A *panzer*, or ironclad, division is a completely self-contained unit. In addition to the tanks, there is a squadron of supporting aircraft to each division, a mechanized reconnaissance unit, consisting of motorcyclists and light armored cars, a field artillery detachment mounted for swift and mobile operations, an antitank battalion, an engineer battalion for the maintenance of roads and bridges, and a mobile repair and supply unit with traveling workshops.

When a panzer division proceeds into action, as demonstrated in Captain Bryan de Grineau's panoramic impression of the advance of a panzer division in Greece, the real weight of the onslaught is sustained by the four battalions of 100 light, medium, and heavy tanks.

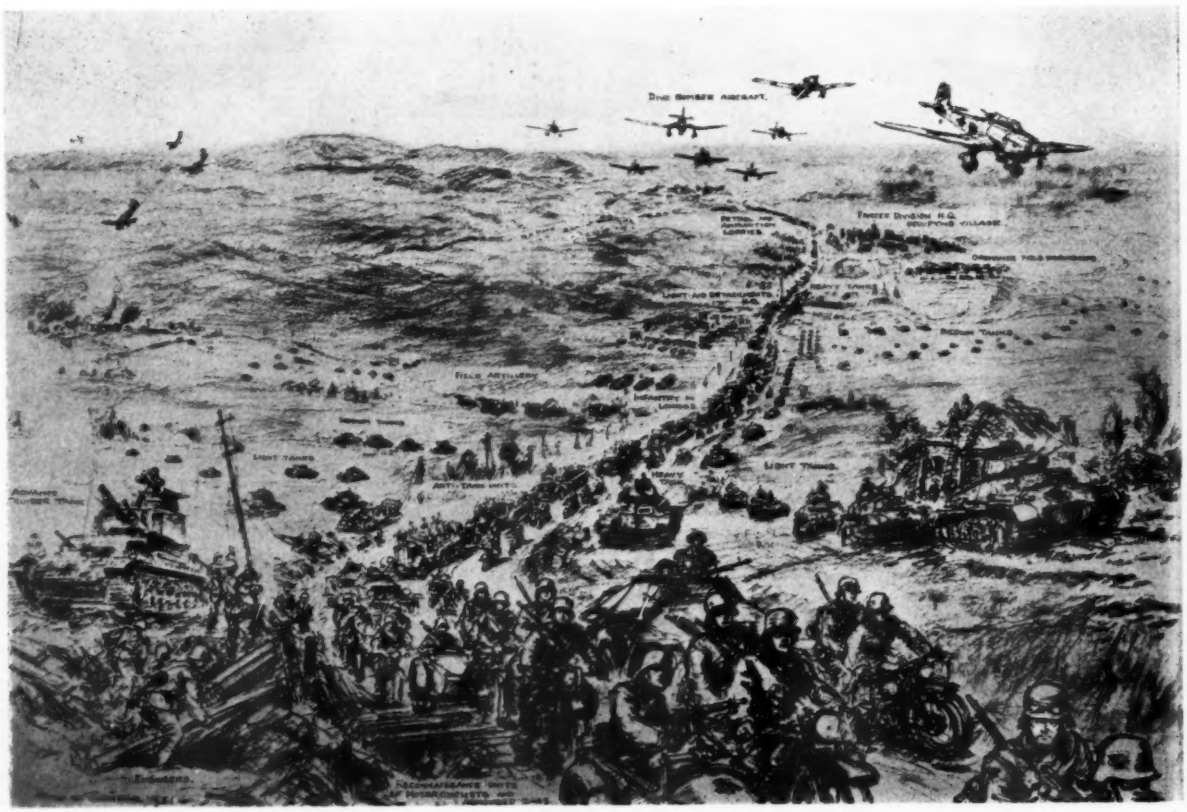
At that time the most numerous type in action was the medium and very fast tank of about 20 tons, armed with a 37mm gun, two machine guns, and with armor about ⅛ of an inch thick. It was operated by a crew of three.

The normal heavy tank carried a 75mm gun, 2 machine guns, a crew of five, cruised comfortably at 30 m.p.h., and shipped a formidable load of ammunition.

Most dangerous of the monster tanks encountered at that time was that weighing about 36 tons. It had a quarter-inch of armor, carried two 105mm guns able to fire high explosive, and a 47mm antitank gun. It had a crew of eight.

When the panzer divisions attacked the Low Countries and Greece, the primary object was speed. Stukas bombed and machine gunned enemy positions, and, in

*Courtesy *Illustrated London News*.



Tanks, Motorcycles, and Armored Cars Move Up With Dive Bomber Escort

fact, took the place of the artillery barrage of the last war. Meantime, the advanced scouts, on motorcycles, armed with tommy guns, light machine guns, and grenades, reconnoitered openings to find the weakest spot. Once a wedge was driven in, the light tanks penetrated as deeply as possible, struck at communications, gun lines, and headquarters, and sent back wireless information to the heavy tanks, which swept through like a giant battering ram.

It is doubtful if any of the heavier German tanks were put out of action during the Battle of France.

Captain Grineau's panorama, showing all units in action, explains itself. The motorcycle scouts advance on a position, and all other units of a division move forward in support—tanks, guns, infantry in lorries, with petrol and ammunition lorries bringing up the rear, and the dive bombers acting as escort and in action.

Tanks vs. Fire Power, 1942-43*

ROMMEL lost a large proportion of his tanks in North Africa. The Allies pursued his forces with tanks. In Russia, Poland, France and elsewhere, the panzer divisions thrust forward as the spearhead of the attack. The Allies have learned the lesson of the panzer divisions, but have the Nazis any surprises to spring?

In considering the use of the tank, it seems to be indicated that the second great tactical revolution of the war has taken place, for the original panzer formation has undergone profound modifications.

Two factors have apparently been responsible for changing the original formation of close-packed tanks headed by scouts and accompanied by supporting units of all arms.

First, there was the counter-tactics of the Russians; and, second, the German necessity of countering tank attacks in North Africa. The panzer has become a defensive as well as an offensive formation. The change was effected mainly by increasing the amount of infantry support, and by a greater use of artillery.

It is a most significant change, and not only because of its encouragement to those who regard Germany's conquest phase to be now at an end. Far more important to serious military minds is the aspect, in relation to the coming task of attacking Germany ourselves, that the panzers may well prove as formidable in defense as in offense, especially if we don't move quickly with the times and understand clearly that the days of fast-moving, independent tank formations are nearly at an end.

The Russians carefully studied the German campaigns in Poland and France. They were temporarily upset by a surprise change of German tactics at the beginning of the Russian invasion; instead of sending panzers in deep thrusts across the country, as in France and Poland, the Germans used their armored columns in Russia like whips, penetrating so far, then turning back in attempts to encircle whole armies.

The Russians, on their part, concentrated on cutting off the speeding panzers from the main German infantry and artillery formations behind.

This led to all sorts of German dodges planned to hold territory till the infantry and guns came up—notably the digging-in of tanks and converting them into steel fortresses from which groups of infantry could set out to keep communications clear and resist counterattacks.

When such counterattacks were delivered by heavy Russian tanks, the Germans had to improvise even more drastically. They found that the ordinary small antitank guns with which the panzers were equipped—3.7 cm. and 7.5 cm.—were quite inadequate to keep the counterattacking Russian tanks at bay.

It was then that they brought down the muzzles of some 88mm antiaircraft guns, and used them to some effect at close quarters as antitank weapons.

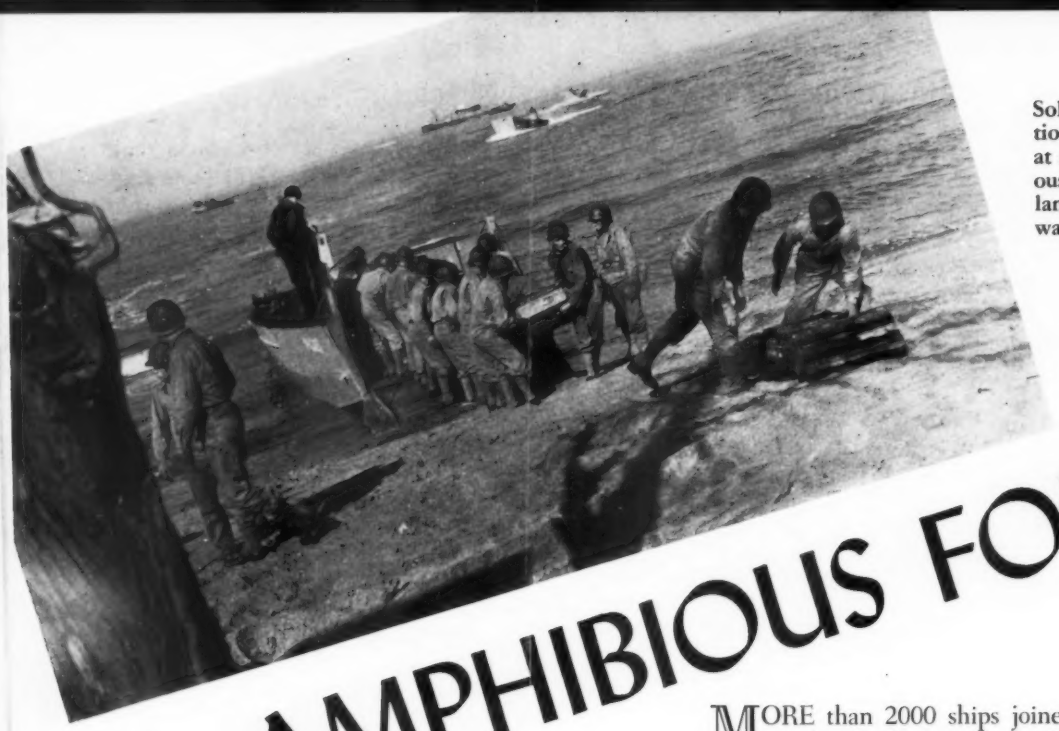
The German General Staff has a rule whereby tactical lessons such as these are embodied at once in Field Regulations. In other words, there is *no gap between the lesson and its adoption in general practice throughout the Nazi army*. Thus Rommel in Africa was apprised of the Russian antitank tactics and advised to make suitable dispositions accordingly when the British attacked.

At first, our armored brigades set out very much like the original German panzers, as if expecting to encounter similar enemy formations. They *did* meet German tanks, but these were often decoys, leading them straight into the close range fire—hidden by artificial smoke and other stratagems—of the German guns. These were of a greater caliber than the ordinary antitank gun that our tanks had been designed to meet, and many tanks were destroyed by them.

It has been demonstrated that powerful artillery, provided it can be mounted on tractors and brought quickly to strategic points, has the measure of today's tanks.

The tanks of tomorrow, indeed, may have sufficiently strong armor to resist big guns. *It will be a race between tank armor and gun-power.*

*Reprinted from *United Services Review*. (See also General *Haukins' Notes*, Jan.-Feb., 1943.)



Soldiers unload ammunition from a landing barge at an East Coast amphibious training base as other landing craft move in towards shore from a Navy transport.

U. S. AMPHIBIOUS FORCES

Official U. S. Navy photographs.

An Army jeep rolls off a landing barge and onto a specially built wire net road at an Atlantic coast training base.

The sturdy ocean-going LST, with the lighter landing craft mounted on its decks, plies its way across the Atlantic bound for North Africa.

MORE than 2000 ships joined in the greatest armada of all time to speed the United Nations invasion of Sicily.

Beachheads were established by fighting forces from the radically designed and highly-specialized fighting ships, many of which pushed their way across the Atlantic under their own power.

For some time, a unified invasion force, composed of picked Army and Navy officers and men, has been training for assaults on enemy territory.

Because of the complex nature of amphibious operations, the training program is both broad and intensive. Every officer and man in the Force must understand not only his own task, but the part that will be played by the other units involved.

Naval personnel assigned to the "Amphibs" are selected on the basis of outstanding records in service or in the classroom, and for excellent physical condition. The result is a group young, enthusiastic, and capable of meeting the extraordinary demands of its dangerous assignment.

They are sent to one of the bases of the Amphibious Force, where they begin their specialized training. They study seamanship, piloting and navigation; they drill in gunnery, ship and plane identification, and the highly intricate communications methods necessary to carry out a landing with dispatch.

At the same time, the Army selects units which have already had thorough training in the infantry or the armored forces, and assigns them to the Amphibious Force.

The enlisted men are given a tough conditioning course to prepare them for the hard task that lies ahead, and then receive basic amphibious training. They learn to clamber over the sides of ships and down into the

This landing craft is called a "crocodile boat." Here a tank rolls down the steel ramp to the beach during training maneuvers.

small boats pitching below; they are taught to come ashore from the landing craft through rough water and still keep their equipment dry; they study the tactics of surprise attacks.

Meanwhile, the Army officers go to another base, where, with Navy officers, they learn the art of amphibious operations. They study strategy and tactics, and the proper methods of liaison between the many organizations involved. Great stress is laid upon communications.

Working with large scale models of the ships attached to the Amphibious Force and also scale models of the equipment that will be used, the Army transport officers work out the intricate problems of so loading the ships that the equipment may be unloaded swiftly and in the proper sequence when the landing is made.

When all units have completed their basic training, they are assembled for advanced training. The crews of the small boats are assigned to the transports aboard which they will serve; the flotillas of larger landing craft are formed; the Army troops go aboard the transports. Then dress rehearsals of actual landing operations are run through. The ships are loaded for combat operations with the needed supplies and equipment. The convoy then sails for a selected practice landing beach, and actual landings are made under simulated battle conditions, with the beach "defended" by opposing troops and with aircraft and Naval combat vessels taking part.

This is the Amphibious Force—a strong, well-drilled invasion spearhead which will carry the fight to the enemy, to drive ashore from a convoy with perfect coordination, to start the offensive on the shores of enemy-held territory.

Army troops stream out of an LCI and "hit the beach" during practice invasion maneuvers along the Atlantic coast.

TRAINING FOR INVASION

Landing craft like this were used by the Allied amphibious forces invading Sicily. This picture was made during invasion maneuvers along the African coast. U. S. amphibious crews are paddling in rubber boats back to their LCI after a practice landing.

Tactical Exercises and Maneuve Fo

by Brigadier General Hamilton S. Hawkins, Retired

Herein are valuable training suggestions, with details left to be worked out by the division, brigade, regimental, and separate unit commanders.

IN ORDER that the division, and any of its component units, can be handled quickly and with greatest mobility, each unit must have a number of set formations that can be understood by all in a few established words, which become common language to everybody without the necessity of describing them in detail every time an order is issued or reference is made to them in instruction or conversation.

Except when the division, or any smaller unit, is marching in route-order in protected or safe areas (even safe from airplane attack), it does not march on roads. It must be able to move across country in any direction—forward or backward, left, right, or toward any ground feature or point of the compass—merely by the issue of a few simple words of command or brief vocal or written messages. These set formations enable such movements to be started almost instantly.

Aside from route marches, the division has to understand only a few set formations which are named "Maneuver Formations." These Maneuver Formations are practically deployed formations, either as foragers or lines of squads or platoons. No unit larger than a platoon is in close order. They are convenient for cross-country movement, for dispersed defense against air attack, artillery fire or small arms fire, and for quick dispositions of all units for combat.

EDITOR'S NOTE

Well known to most CAVALRY JOURNAL readers, General Hawkins needs no introduction as a sound tactician. To officers who once served under him, his methods of training and ability in the field are equally respected.

This outline for tactical exercises and maneuvers is based upon General Hawkins' personal experience while in command of the 1st Cavalry Division.

By utilizing the four Maneuver Formations of the division, the commander can issue quickly, by voice to his commanders, or by message or radio, his brief orders for the direction of march—the Maneuver Formation No. 1, 2, 3 or 4—and the rate of march. Thus, it is like giving drill commands to a small unit. The division can accommodate itself to the terrain, change direction or formation or gait, and immediately be ready for combat of any kind in a very short time.

In daytime, cross-country movement is made easier and safer. At night, the columns must be condensed in the manner of route order marches, although they must be across country.

DESCRIPTION OF THE MANEUVER FORMATIONS

Each squadron (or artillery battalion) has one standard Maneuver Formation. It is really its best combat formation—*a line of troop columns of platoons,* as foragers or each platoon in *line of squad columns.* The squadron commander can alter the formation to suit conditions, but the squadron must be able to move in any direction at any gait—forward, backward, right, or left.

Each regiment has two Maneuver Formations.

No. 1 Maneuver Formation is *Line of Squadrons.* Formation A, as prescribed in the Cavalry Field Manual, 1940, Par. 261, is satisfactory.

No. 2 Maneuver Formation is *Column of Squadrons.* Formation C. of the Cavalry Field Manual is satisfactory.

In both formations, the deployment and arrangement is suitable for immediate disposal of the units into any order for combat, the squadrons being practically in combat order at all times.

Each brigade has three Maneuver Formations.

No. 1 is *Line of Regiments* on *(such a regiment) at (so many) yards interval. Regiments in Column of Squadrons.*

In this formation the special units, such as weapons troops, communications, etc., have specified places; also, the artillery battalion, if one is assigned, has its place.

Each regiment is in the Maneuver Formation that the circumstances or terrain seem to indicate to the regimental commander as suitable. No. 1 is the habitual brigade formation.

No. 2 is *Column of Regiments at (so many) yards distance, in Line of Squadrons.*

eFormations for a Cavalry Division

No. 3 is Column of Squadrons at (so many) yards distance between Regiments.

The division has four Maneuver Formations.

No. 1 is *Line of Brigades at (so much) interval.*

No. 2 is *Column of Brigades in Line of Regiments at (so much) distance.*

No. 3 is *Column of Regiments in Line of Squadrons.*

No. 4 is *Column of Squadrons.*

Each of these formations has a specified order for all component units.

It must be emphasized that the reason for these formations is the necessity in modern warfare for cavalry to march, not on roads, but across country and, except at night, in extended order. Furthermore, orders can be given and the division put in motion much quicker, and any dispositions for attack or defense can be made more easily and quickly from these Maneuver Formations than from the old columns of fours or twos.

It will be noticed that in these formations no advance guards are used. Covering detachments are more mobile, more under control and better in every way when maneuvering across country.

Another important consideration is that the war in Europe has shown that with adequate equipment of antitank guns, the enemy tanks can be stopped if the enemy airplane attacks can be neutralized or rendered ineffective. In addition to support from our own airplanes, troops on the ground must learn to maneuver in dispersed formations.

In any movement the division commander has only to order; for example:

"Division marches on (point or direction) 6 miles per hour. Maneuver Formation No. 1—*Line of Brigades on 1st Brigade,* Interval between Brigades—1500 yards." Or, "Maneuver Formation No. 2—*Column of Brigades in No. 1 formation.* Distance between Brigades, 600 yards."

Such things as covering detachments and combat patrols are attended to by brigade commanders or regimental commanders if regiments are abreast in the brigade.

Of course, when roads can be used, the ordinary system of Route Columns is used; but this will not be possible in the theater of operations except sometimes at night.

Designation of Terrain Objectives

When the division commander issues such an order, the brigade commander of the base brigade has only to order, for example, "Brigade marches at once on (such a feature, point or direction), 6 miles per hour. Ma-

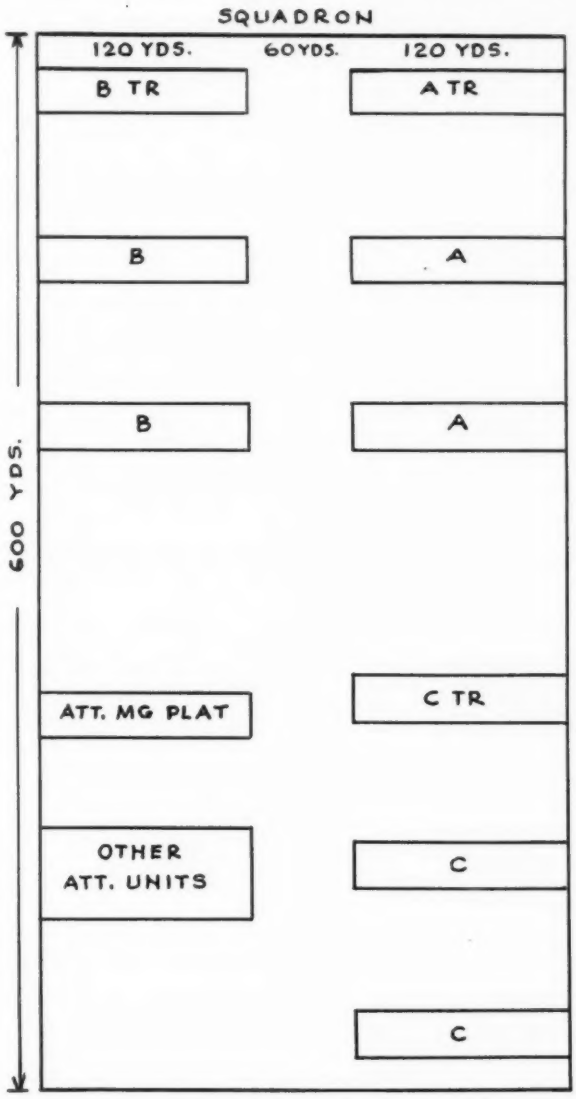


CHART NO. 1

Cavalry Rifle Squadron Maneuver Formation

The Cavalry Squadron Maneuver Formation will occupy a rectangle of approximately 300 yards in width (or front) by 600 yards in depth. This span is variable, but for purposes of this chart it is assumed that the squadron is in *Line of Troop Columns of Platoons,* with one troop held back 200 yards in reserve.

The habitual formation of each troop is a Column of Platoons, with 100 yards distance between platoons.

The platoon is deployed in line with at least 5 yards interval between troopers, or in Line of Squads.

The squad is usually the only unit which at times may be in close order. But, on some kinds of terrain, the platoon may move in Column of Squads.

Combat Patrols and Covering Detachments are not included in chart rectangle.

Note: The intervals and distances as shown in the text and on the charts are approximate. They are subject to variation and may be changed to fit the situation and terrain.

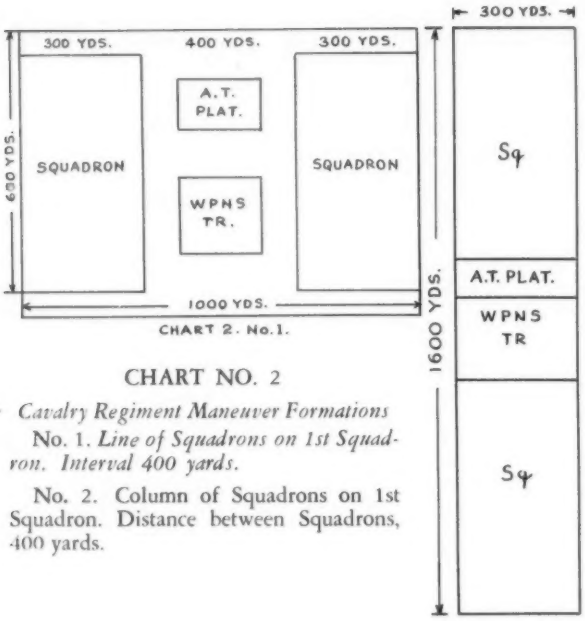


CHART NO. 2

Cavalry Regiment Maneuver Formations

No. 1. *Line of Squadrons on 1st Squadron. Interval 400 yards.*

No. 2. Column of Squadrons on 1st Squadron. Distance between Squadrons, 400 yards.

neuver Formation No. 1, *Line of Regiments on 5th Cavalry*. Interval, 1000-2000 yards." Or, "Maneuver Formation No. 2, *Column of Regiments*. Distance between regiments, 1000 yards." He may order, "Follow me," without giving the direction if he is going to lead.

Regimental Commander, 5th Cavalry, orders, "Maneuver Formation No. 1, *Line of Squadrons on 1st Squadron*. Interval, 400 yards; follow me."

Regimental Commander, 12th Cavalry, orders, "Maneuver Formation No. 1, *Line of Squadrons on 1st Squadron;* follow me," and leads his regiment to its position, etc., etc.

Each unit commander may make any special arrangements he deems wise after the start is made. Initiative is expected. The order of the next higher commander requires only the relative positions of his units, the direction and the rate of march.

Any regimental commander who has a front of his own, puts out his own covering detachment and combat patrols. Thus, once the movement is initiated, the division commander relies on his subordinates to do the right things.

These standard formations must be had, also, for artillery battalions, engineers, signal troops, various headquarters. The positions in the division of artillery battalions, engineers, reserve units, are all specified in the standard formations for each of the four Maneuver Formations.

Must Have Horses Available

Units that are motorized have to do the best they can. Across country, they may not be able to go; if so, they must be left behind. The mobility of the division must not be confined to ground where motors can go. On such ground, the enemy mechanized forces would outmaneuver the cavalry division because they would move faster than horses. There must be no competition in mobility between horse units and mechanized units on ground favorable to the latter. Division Headquarters, therefore, as well as Brigade and Regimental Headquarters, must be mounted on horses, as well as have motors for use where they can be used.

Supply

The supply trains of the Division are motorized. There are usually roads leading to various points behind the division where supplies can be sent for the different regiments and separate units. These are established at points as safe as can be found with several days' supplies. When the division moves forward these points are advanced. When the division retires, new points are established farther in rear or near the locations toward which the division is moving. The division ought to be able to carry several days' supplies with it on pack saddles, in saddlebags, or by vehicles when this is practicable. When the units run completely out of supplies, they must send packs back to the supply points or retire toward those points tem-

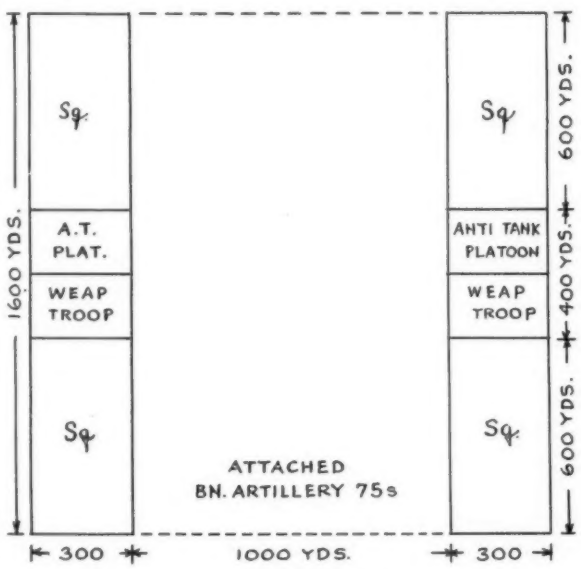


CHART NO. 3

Brigade Maneuver Formations

No. 1. *Line of Regiments in Column of Squadrons. At (1000 yards) intervals.* (This is the habitual Brigade Maneuver Formation.)

No. 2. *Column of Regiments* in *Line of Squadrons* would be one regiment following the leading regiment with the ordered distance between them, and attached artillery in the spaces between regiments or following the rear regiment. This column would be about 2400 yards long with a front of 1000 yards.

No. 3. A simple Column of Squadrons, would be over 4000 yards. A Line of Regiments in Line of Squadrons, with 600 yards interval between regiments, would have 2600 yards front and only 600 yards depth.

porarily to get supplies to carry with them for several days more. Of course, when an emergency demands it, the troops must do without supplies, except ammunition, for a day or two. Resource and expedients come into play.

After these Combat Formations for every unit in the division have been established and learned, the Division practices its first tactical exercise.

Tactical Exercise No. 1

The division, less its trains, is assembled in any convenient order and place without regard to relative positions of the larger units. The division commander appears in the area, assembles his brigade, artillery, and separate unit commanders. He gives them brief orders as suggested above and starts them on their way across country. He tells them that they are going to be attacked by airplanes and that the whole march must be made with that in mind. The necessary dispersion must be made at once and maintained until the destination is reached, perhaps some five or ten miles away. When the destination is reached, he changes the direction of march and orders another Maneuver Formation. If there is room and time he does this several times and brings them back by such means to the starting point near their camps or station.

This is simply an exercise in using various communications to send orders and control the division—to "sling it around," so to speak, while in more or less dispersed order.

Tactical Exercise No. 2

The division commander tells his commanders he is going to *march to a certain line or point, by a circuitous route,* for a reconnaissance of the area and for a short distance beyond the objective toward which they will march. He gives the Maneuver Formation to be taken, perhaps with greater intervals between the larger units. He changes direction at proper points to follow the circuitous route. He may have to change the formation to accommodate the division according to the terrain. Woods, rivers, or mountain passes may have to be traversed. Towns or villages may lie in his path and be passed by, or avoided, and perhaps reconnoitered. Having arrived at his destination, he halts in readiness for anything, and requires his brigade commanders to send out patrols to reconnoiter areas in their front and flanks. Only very short distances are used for this, as it is only an exercise, and he wants to avoid long delays and tiresome or boring waiting for patrols to return. Perhaps, he permits the units to have lunch during this time.

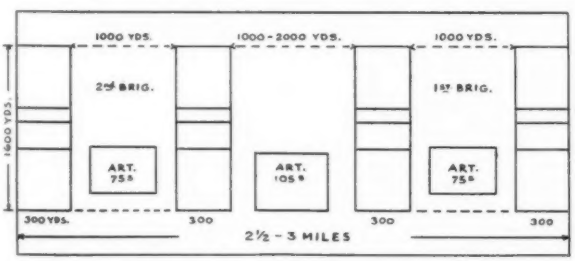


CHART NO. 4

Division Maneuver Formations

No. 1. *Line of Brigades at* (1000 to 2000 yards interval). *In Line of Regimental Columns* (No. 1 Brigade Maneuver Formation) Division Reconnaissance Squadron and Division Engineer Squadron are given separate orders.

No. 2. *Column of Brigades* would have each brigade in its No. 1 Formation, with 600 yards between the leading and the following Brigades. The front would be 1600 yards; the depth about 3800 yards.

No. 3 and 4. These in simple Column of Regiments or Squadrons when the lateral space is very narrow. *Column of Regiments,* each in *Line of Squadrons,* will have a front of 1000 yards and a length of about 4800 yards. A *Column of Squadrons* throughout would be over 5 miles long.

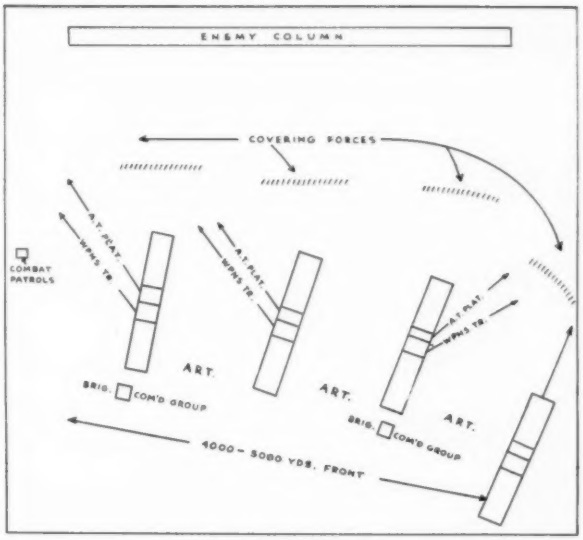


CHART NO. 5

Tactical Exercise No. 3

Division Reconnaissance Squadron may have preceded the division at beginning of movement, but is now replaced by Covering Forces and is operating far on right flank to discover rear of enemy column, or is retired to rear to guard the rear of the division.

Other groups, such as Engineer Squadron, are back with the trains.

Then he marches back by a different route, but always across country, and under the assumption that strong forces of the enemy are following at six or eight miles distance; and the division is put into a *defensive position,* which requires it to halt and turn about to face the enemy. The position is only for a delaying action not very far from camp. It is done rapidly, and then the units are dismissed.

Tactical Exercise No. 3

The division is marched across country by similar means with the idea of *striking in flank an enemy*

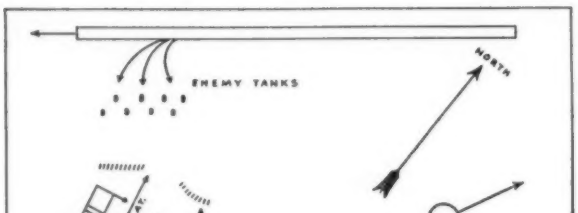


CHART NO. 6

Tactical Exercise No. 4

Leaving AT guns to fire on enemy tanks and then fall back and rejoin division, the division commander orders "Column of Regiments on 1st Brigade march N.E." All units turn to right and follow 1st Brigade. Division Reconnaissance Squadron moves to find motorized troops of enemy which are not protected by strong groups of tanks.

motorized or marching column supposed to be moving on a certain road not very far away. When the road is in sight of the covering forces, the division halts and prepares for fire action against the enemy column. The handling of the division reconnaissance squadron is important here. Concealment while marching, and a sort of ambush position are emphasized. Employment of covering detachments and security patrols on the flanks of the brigades are important. The return march is merely another exercise in moving in one of the Maneuver Formations across country.

Tactical Exercise No. 4

This is the same as Exercise No. 3, except that while moving on the assigned mission the division meets a small mechanized force of the enemy. Antitank units go into action and then retire rapidly, while the division is moved back and then maneuvers several miles around one flank in order to gain the flank and rear of the enemy tank units and attack the motorized units of infantry that follow the tank units.

This requires speed and initiative on the part of subordinate commanders, and rapid communications from division commander to subordinate commanders. The division commander must use brief orders changing the direction of march and using appropriate Maneuver Formation.

For example, he could send a message: "All units to the right (northeast) in *Column of Regiments, Maneuver Formation No. 3.* All antitank units rejoin their commands. Rate of march, 8 miles p.h."

Then, after a half hour: "Slow down to 5 miles p.h. Change direction to north, *Maneuver Formation No. 1 —Line of Brigades on 1st Brigade;* interval, 1800 yards."

Then, perhaps, he makes another change of direction so as to curve around to march directly upon the flank of the supporting motorized columns of the enemy.

This exercise is difficult and requires much practice and initiative on the part of various commanders. Previous practice in Tactical Exercise No. 1 is important.

Use of the division reconnaissance squadron is important to guide the division. This squadron, however, must not give away the presence of the division behind it. If it cannot negotiate the terrain across country, it should be left behind and reliance placed on the mounted covering detachments of the brigades. Scout cars should not be used in front. They would give warning to the enemy.

Tactical Exercise No. 5. Delaying Actions

Delaying actions are of two different kinds. Action against mechanized forces and action against infantry. A third kind would have to be considered if enemy has cavalry. Delaying actions involve both defensive action and attacks.

Delaying Actions Against Strong Mechanization

This requires great mobility and independent action on the part of component units of the division. The mechanized enemy will stick to roads or their vicinity, or to ground that can be traversed easily. Tanks, however, have developed considerable mobility across country. This must be considered by cavalry commanders.

Since the division reconnaissance squadron and the division antitank troop will be motorized, they will presumably have as much mobility on any given terrain

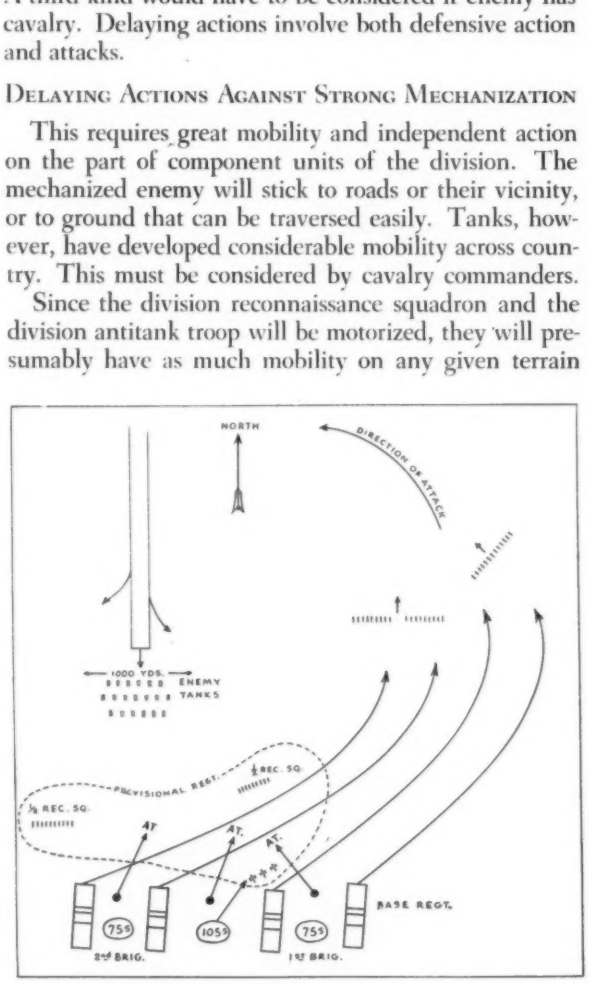


CHART NO. 7

Tactical Exercise No. 5

After sending out the provisional regiment, the division commander orders *Brigades Right Oblique to North East.* Engineer Squadron (if available) moves up to join provisional regiment.

as the hostile mechanization. It would, therefore, be safe for the division commander to oppose frontally the advance of the hostile mechanization by using the reconnaissance squadron supported by the antitank troop. These forces could be reënforced by the antitank platoons of the brigade weapons troops. Sufficient scout cars must be used on the flanks to detect the wide turning movements that the enemy mechanized forces will often use to get around in rear of the delaying forces. Reports of such movements by radio (in the clear) from scout cars will enable these delaying units to withdraw in time. Of course, scouting airplanes will be of great service also, especially in daytime.

Now, therefore, in this tactical exercise, the division commander will combine his *reconnaissance squadron,* all antitank units, and his *engineer squadron,* into one command to fight delaying actions in front of hostile mechanized advance. The *motor battalion of 105 howitzers* from the artillery regiment will also be a part of this command.

This command must be organized and used in practice. A colonel and several assistants in motor cars should command it. It will use roads and such cross-country as may be feasible. It must have a dispersed formation to provide for enemy air attacks. It must have a name such as *Provisional Antitank Regiment;* but it is not assembled as such until the need for it is apparent. The division being in any formation, the order is given, "Provisional antitank regiment assemble at (point)." All units assigned to this provisional regiment leave their regular organization and proceed to the assembly point.

In addition to those means of delaying an enemy mechanized advance, the division commander sends his brigades, each supported by a battalion of 75mm howitzers, around across country to attack the flank and rear of the enemy mechanized column. These continuous attacks are especially directed against the motorized infantry supporting the enemy tanks.

The exercise is initiated by an oral, or dictated, or written order from the division commander, something as follows:

"Division fights delaying action against hostile mechanized force moving (south) along or near road between (such points). Provisional Antitank Regiment moves at once on (such point) to oppose enemy movement.

"The division, less provisional regiment, marches on (point or direction), 6 miles p.h., *Maneuver Formation No. 1, Line of Brigades on 2nd Brigade,* at 800 yards interval."

The division commander will probably accompany brigade commander of base brigade, and will indicate the changes of direction to follow a circuitous route toward the flank of the enemy. The covering forces of the two brigades (one rifle troop to each) will be the means by which the moving enemy is found.

In case the road on which the enemy is reported moving is found empty, the division must halt and send out patrols to discover him. When the enemy is discovered, the division may have to move back or forward, right or left, to place itself in position to attack the flank or rear of the enemy.

In case a comparatively small flank guard of the enemy is encountered it should be attacked at once, by the regiment that first encounters it, by dismounted attack while other units attack mounted against its flank or rear. Such an attack is executed by the regiment or brigade without waiting for Division orders. Thus, the initiative and resource of every commander is developed and depended upon.

These attacks against the enemy mechanized column are continued as long as he moves forward. Attack—then maneuver for another attack, is the order of the day. The division is reassembled by radio orders or messengers at some rendezvous.

For this exercise, the enemy may be represented by a column of tanks or may be imaginary. In any case, when contact with the enemy is assumed to be gained, the units must change from Maneuver Formations to Combat Formations, and go through the motions of firing at the enemy and falling back to attack again after the enemy has resumed his advance.

This exercise represents an important operation of cavalry that cannot be carried out well without practice.

Tactical Exercise No. 6. Delaying Action Against Infantry (Not Motorized)

In this exercise the division commander decides to oppose the hostile infantry by using one brigade in front of the enemy advance and the other brigade on one of the enemy flanks. He gives simple and brief orders to carry out this plan. A *liaison detachment* of one platoon is posted between the brigades.

Each of the two brigades moves out by means of its Maneuver Formations.

Depending on the character of the terrain, the *artillery* attaches one battalion of 75mm howitzers to each brigade and holds the motor battalion of 105mm howitzers on the axis of movement of the brigade offering direct opposition. All units, however, avoid the roads.

The *Combat patrols* in each brigade have a very great responsibility. Infantry can march across country; and while waiting in a position to use fire power against the advancing enemy, the cavalry may find itself outflanked by a demoralizing surprise. Combat patrols must be trained to scout around the vicinity in which they are posted so as to prevent such surprise. The same thing applies when the cavalry is moving. Combat patrols must always be out and very active. Covering forces can take care of the front.

The division reconnaissance squadron, which is mechanized, should be sent out well in front of the brigade, which is on the axis movement, to gain contact and explore widely on both flanks for any signs of hostile mechanization.

The division commander keeps the advance echelon of his headquarters with that of his artillery commander. His antitank troop and engineer squadron remain behind the brigade on the axis of movement ready for any emergency.

As in all exercises during maneuvers, all camps or bivouacs are in dispersed formation and camouflaged if possible. While moving, these divisional units keep always in the Maneuver Formations.

When contact with the enemy infantry has been gained, it should never be lost. Any patrol that gains contact should watch the enemy night and day until it is relieved. Progress of the enemy along the axis of movement should be reported every hour, and any movements of important units off the axis of movement must be reported at once.

This exercise can be had with the enemy represented or imaginary. If imaginary, all dispositions are made, then contact is assumed and commanders notified by officers detailed as umpires. Each brigade and separate unit makes dispositions to defend its position or attack the enemy according to its mission in front of the enemy or out on the flank.

The liaison system can be tested and the exercise terminated.

One of the important principles in such operations is that while the force opposing the enemy along the axis falls back from position to position, the force operating on the flank makes harassing attacks continuously. Not one attack but many during the day are made. While keeping the enemy observed by patrols, the brigade on such duty must be able to attack by fire, then withdraw and maneuver around to attack again.

Tactical Exercise No. 7. Attack Against Infantry

These occasions are numerous. The Division may have to attack an infantry rear guard or flank guard when it is not desirable to go far around to avoid such a force. It may have to attack an infantry force which is advancing on the flank of our army or is pursuing. Such attacks are chosen when the hostile infantry is not as numerous and powerful as our cavalry division. Otherwise, of course, the cavalry division resorts to defensive actions and delaying actions.

Another occasion for attack is when the cavalry division is part of a larger force which is attacking the enemy and the mission of the division is to coöperate by attacking the enemy in flank.

For this exercise, assume any of these occasions and move the division out across country in one of the Maneuver Formations to make contact with the enemy. When contact is gained by the reconnaissance elements or the covering detachment or detachments, dispositions are made to attack.

The first thing to consider is the terrain. Does it give cover for the individual rifleman to use in advancing toward the enemy? Perhaps there is cover on one side and not on the other. For any dismounted attack, some sort of cover for the individual soldier to use in his advance is essential. If this cover, in some form, is not present, the commander should maneuver so as to attack over other ground having little folds, gullies, holes, boulders, brush or other advantages which the soldier can use to protect himself, at least from observation, while lying down. Attacks over flat, coverless ground are too costly for dismounted cavalry to undertake with the means at its disposal. If the enemy is moving, dismounted cavalry can risk the crossing of open spaces if not more than a hundred yards across.

For supporting fire, open spaces across which the enemy can be seen are suitable. Every squadron in the attacking echelon should have fire support of machine guns posted in the intervals between squadrons. The first thing to do, therefore, is to put these machine guns into action and let the riflemen advance in the spaces between these groups of machine guns. When artillery is available, it, together with the machine guns, opens up the fight.

The Division Commander directs where each brigade is to attack, and on what general targets the supporting artillery, not attached to brigades, is to fire. The brigade commanders and regimental commanders post their artillery, machine guns and other supporting weapons, and the squadron commanders put their riflemen in between.

The development and deployments are made quickly, the led horses are sent back and held in dispersed formations under cover. Any division reserves are posted, and the action commences immediately. The Maneuver Formations lend themselves to this quick disposition so that the enemy has little time to prepare.

Deliberate, long-drawn-out preparations and prolonged preliminary reconnaissance are not for cavalry except in special cases.

If combined action is feasible, one brigade, dismounted, attacks first, and by using cover, advances to within three or four hundred yards of the enemy. Then the other brigade attacks mounted on one or the other side of the dismounted brigade—and by surprise if possible.

The attack is followed up by antitank units to resist hostile tanks that may have appeared unexpectedly. If hostile tanks appear in strong force, the whole division withdraws as quickly as possible in dispersed order to assemble at a rendezvous previously designated. Such an episode would be a good exercise of the resource and leadership of the division.

The reconnaissance squadron explores far out on the flanks.

Tactical Exercise No. 8. Defensive Position

The division, from some Maneuver Formation, should practice literally galloping into a position to hold a bridgehead, mountain pass, or other defensive mission.

The artillery and supporting weapons, machine guns, etc. go down on the ground for action first of all. The riflemen are posted afterwards.

Led horses are sent back, dispersed, under best cover available, and liaison established between them and their squadrons.

Covering forces remain out in front or on flanks until contact with the enemy is had or until relieved. Reconnaissance squadron explores far out on flanks.

Division Commander rectifies the dispositions, and hasty entrenchments are started.

Then, practice a quick withdrawal while under fire. Dispersal formations or Maneuver Formations are taken quickly, and all head for the rendezvous.

Summary of Tactical Exercises

No. 1. A *march* across country in various *Maneuver Formations*. *Dispersion* to reduce casualties from air attack. Practice of control.

No. 2. A *march* across country in *Maneuver Formations* to a certain line for purpose of *reconnaissance*. Brief reconnaissance by patrols. Return march halted and units turned about to occupy a defensive position against pursuing enemy. Only a brief occupation of the position before units are dismissed.

No. 3. A *maneuver* across country to *attack* flank of *moving enemy*. Deployment for *fire action*. Special attention to handling of the division *reconnaissance squadron, covering detachments* and *security patrols*.

No. 4. Same mission as in Exercise No. 3, but division *meets* a small hostile *mechanized force* evidently sent to oppose it. Use of *antitank guns* and *maneuver* of the division to attack flank and rear of enemy. Motor vehicles on reconnaissance must not betray the presence of the division.

No. 5 Delaying Action against *strong* hostile *mechanized forces*. Use of a *provisional Antitank Regiment*. Much *initiative* on part of squadron, regimental, and brigade commanders. *Mounted attacks* against small enemy forces seeking to delay the advance of the division towards the hostile flanks or rear.

No. 6. Delaying action against *infantry* (not motorized). In this exercise the main plan is to oppose the advance frontally with one brigade, while the other brigade operates on the flank.

No. 7. An attack against infantry. Quick deployment or development from *Maneuver Formations*. Use of cover.

No. 8. Defensive position and *withdrawal* from same. Quick assumption of position. Rectify afterwards. Artillery and machine guns posted first. Maneuver Formations gallop into position and also used in withdrawing.

Note: It must be understood that the intervals and distances given in the charts are only suggestive and not mandatory.

Conclusion

Assuming that the small units are well trained, these divisional exercises will fit the division for the rapid cross-country maneuvering necessary to accomplish modern cavalry missions. The developed initiative of every commander, especially the squadron commanders, will enable the division commander literally to hurl his division at the enemy in harassing attacks, successfully accomplish delaying actions, or fight in the spot to a decision over the enemy, if the relative strength of his command and other considerations justify such an attempt.

The formations of the division are loose and flexible and not tight. In harassing and delaying actions, every squadron commander is justified in attacking the enemy on his own, wherever he meets him without waiting for orders from higher commanders. Other squadron commanders go to the support of a squadron that has become engaged unless they are themselves already engaged or have received orders from the regimental commander to do something else.

The regimental commander has only two or three squadrons to handle, and he rides with the commander of one of those squadrons. Similarly, the brigade commander, riding with or near one of his regiments can exercise control, but should expect his subordinate commanders to use their initiative after having been told what the mission is, what the base element is, and approximately how far apart the units are to be.

The division can be wide-spread, wide-flung, and yet be under sufficient control by means of radio communications.

Of course, for a concentrated, coördinated attack, the time, plan, and method of the attack must be fixed by the division commander. The same idea applies to the holding of a position.

In harassing and delaying operations, a very loose formation and much initiative by subordinate commanders must be relied upon and encouraged. This may cause some apparent confusion and temporary loss of touch and control, which must not disturb the division commander. He can, eventually, through radio communications, regain control when he wants to pull his division off to a rendezvous or to undertake a new mission.

Maneuver Formations for the following named units, devised on the same idea, must be determined.

1. Artillery Battalions (75s and 105s).
2. Engineer Squadron.
3. Machine Gun Troops.
4. Weapons Troops.
5. Division Reconnaissance Squadron.
6. Command Groups: Squadron, Regiment, Brigade, Division. These groups are not shown on Charts but are placed wherever convenient for each case.
7. Medical units.

Troops of the Airborne Command prepare to board planes.

The Airborne Co

A landing in wooded area.

THE employment of parachute and air-landed units has provided one of the major surprises in the current war and has led to such development of these units as to constitute a new weapon of increasing importance.

The Airborne Command is charged with sharpening the edges of this weapon and with developing a technique which will make its employment most effective. It consists of the airborne divisions, the Parachute School, parachute brigades and regiments not assigned to airborne divisions, and of numerous parachute and glider field artillery and antiaircraft units. The Command is responsible for the training of all airborne divisions, and for training standard infantry divisions in the use of transport aircraft. Additional functions include the development of airborne equipment and matériel, and the development of supply by air utilizing parachutes, gliders and aircraft.

Closely allied to the Airborne Command is the Troop Carrier Command, which furnishes the transport airplane and glider units for all airborne troops. Set aside at glider stations throughout the country are facilities and training aids for the use of airborne units sent there for that phase of their training.

It is true that airborne units are organized and equipped for special operations, and that parachute elements consist of volunteers, but the fact is stressed that the parachute, glider and airplane are but different means to place the soldier quickly near his objective. Upon landing, the action is that of other ground units, modified by the use of special equipment and weapons, and characterized by a reduction in motor transport

Parachutes open as troops bail out.

neCommand

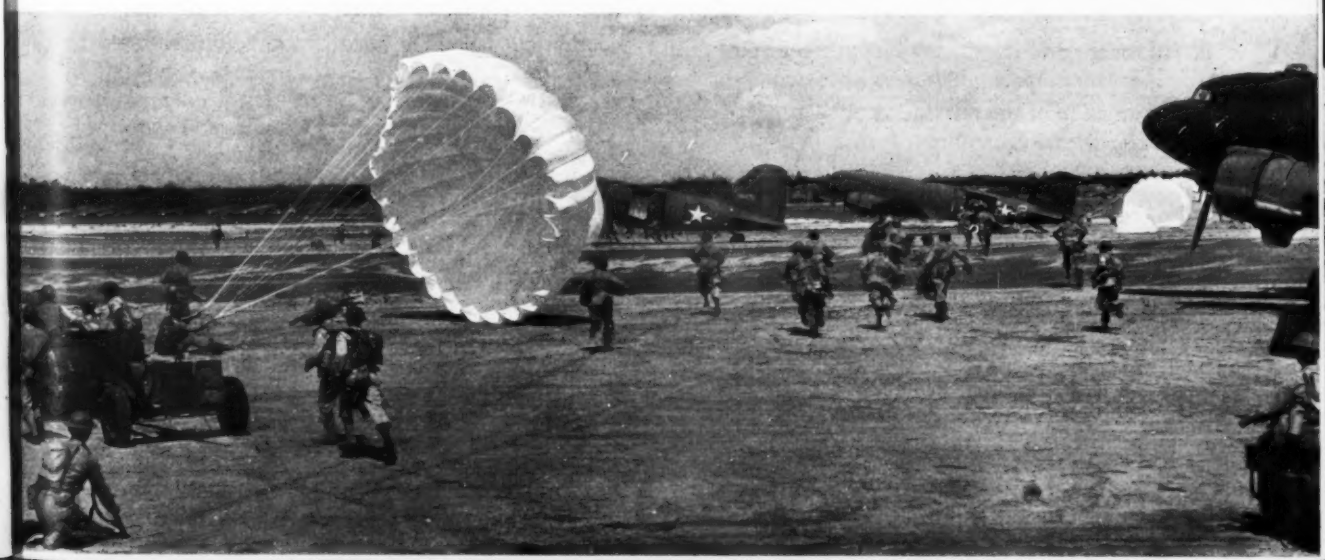
and the necessity for supply by air. The airborne soldier should possess military skill of a high order, and, likewise, his effective employment demands aggressive, intelligent leadership in small units.

The landings of airborne troops will usually be made in enemy territory. The term "shock troops" is not inappropriate, but the idea is far from correct that these are in any sense either "Commandos" or "suicide units."

The employment of airborne troops presupposes a strong superiority in the air, a continuing support by fighter aircraft, and the employment in mass and in conjunction with other major elements of the ground forces. An airborne operation is too expensive to permit failure, and accordingly must be favored with more than the usual number of factors required to insure success.

Airborne troops landed in enemy territory are prepared for immediate action.

Troops of the Airborne Command take an air field during maneuvers.



Principles and Modern Mt

"Send ye men up in the land beyond Jordan to spy out the ways thereof, the going and the coming of the people, the wines and the honeys of the land." So spoke Moses to his assembled captains some three thousand years ago. Today, such a mission is called *reconnaissance.*

THE collection of information concerning enemy and terrain has been a vital factor in the success of every military operation since the dawn of history.

Reconnaissance agencies today are many and varied. To insure the continuous collection of information in every theater of this global war, reconnaissance units must be trained and equipped to function in the jungles of Burma, the deserts of Africa, or the hills and plains of Europe. Depending on terrain, these units will operate in vehicles, on horses, on skis—or on foot.

Successful reconnaissance in any theater, however, must follow certain basic principles. The following are some of the most important reconnaissance principles:

1. *Every commander is responsible for initiating his own reconnaissance in any tactical situation.*

The overall intelligence plan of the G-2 does not release the subordinate commander from this responsibility. He must insure that reconnaissance for his own unit is made within the unit's zone of action.

2. *Reconnaissance should get information of the enemy and terrain.*

a. Information of the enemy includes type and composition, location, strength, and disposition.

b. Information of the terrain includes roads, bridges, wells, lakes, rivers, contaminated areas, landing fields, and bivouac areas.

3. *Missions assigned reconnaissance agencies must be based on their capabilities.*

a. Reconnaissance units, whether vehicular, horse, or foot, have definite limitations as to rate of march and width of zone they can cover.

b. The road net, type of terrain, weather, attitude of civilian population, and enemy resistance must be considered carefully before reconnaissance missions are assigned.

4. *Reconnaissance must be coördinated.*

a. The intelligence plan must provide overall coordination by assigning zones, objectives, and definite missions to each unit.

b. The intelligence plan must be familiar to all reconnaissance units or agencies so that duplication of effort is avoided and mutual coöperation is insured.

5. *The minimum number of reconnaissance agencies necessary to gain required information should be used.*

a. Bearing in mind that reconnaissance must be continuous, the intelligence officer should maintain a "reconnaissance reserve" for unforeseen contingencies and for relief of overworked reconnaissance units.

b. The hardships and difficulties encountered in performing reconnaissance missions make frequent relief of reconnaissance units mandatory.

6. *Reconnaissance is classified as distant, close, and battle.*

a. Distant reconnaissance is normally performed by the air force and by vehicular units and is strategic in nature. It seeks information of large enemy forces whose location and disposition will probably change before contact is made.

b. Close reconnaissance is normally performed by vehicular and horse units and is tactical in nature. It seeks detailed information of the strength, composition, disposition, and movements of enemy units with which our troops shortly may become engaged.

c. Battle reconnaissance is normally performed by vehicular, horse, and foot elements. Its aim is to follow the shifting fortunes of battle and to obtain information

Methods of Reconnaissance

which may enable the commander to take advantage of any enemy weakness or to strengthen his own lines when and where necessary.

7. *Reconnaissance forces are located with respect to the enemy.*

a. The location and movements of reconnaissance elements, unlike security elements, depend upon the location and movements of the enemy.

b. Frequently, reconnaissance elements may be on the enemy's flanks or rear, cut off except for radio contact with the parent unit. Operation is obviously hazardous and resupply difficult.

8. *Reconnaissance forces move by stealth; they fight only in self-defense or to get the required information.*

a. The mission of reconnaissance agencies is to obtain early information of hostile main groups. Reconnaissance units, therefore, must not be delayed by unnecessary combat.

b. The German Army puts it this way—"When patrols and detachments have learned all that is possible by skill and artifice, the commander must fight to make the enemy show his actual strength. If the enemy's screen is thin, he may break through it; if the hostile groups are too strong, he must maneuver to get around them. . . ."

9. *When closing with the enemy's main force, reconnaissance is intensified.*

Information as to general location and approximate strength of a distant enemy is normally sufficient. As contact becomes imminent, however, the commander requires increasing detail—location of artillery, tanks, automatic weapons, and reserves—so that he may dispose his own troops to the best advantage.

10. *Reconnaissance must be continuous.*

The search for information must be unceasing. The enemy's location and disposition, like ours, is constantly changing. Contact is secured as early as possible and once gained is never lost.

11. *Information obtained by reconnaissance units must reach the commander in time to be of use.*

a. The commander of a large unit requires early information so that he may maneuver his forces to the best advantage before contact becomes close at hand.

b. Reconnaissance is extended the maximum possible distance in the direction of the enemy so that the commander will have the maximum time to act on information received.

12. *Personal reconnaissance by the commander is necessary for the most intelligent employment of his unit.*

Regardless of the size of the unit, a commander who has personal knowledge of the situation can employ his unit far more effectively than the commander who relies on information from others.

These principles of reconnaissance will apply regardless of the terrain or type of reconnaissance agency employed.

Instruction

Reconnaissance instructions now vary from the simple oral order given a patrol leader to the detailed written instructions, accompanied by map or overlay, given the commander of a reconnaissance regiment or group. Changes No. 7 of *Basic Field Manual* 101-5, dated February 3, 1943, specify the use of Form 13A, *Intelligence Instructions,* and Form 13B, *Reconnaissance Instructions* for use in Service Schools to insure uniformity in instruction in the formulation of orders to be issued to reconnaissance agencies. Either one of these forms, however, will aid the intelligence officer in the field in preparing reconnaissance instructions and in coördinating all reconnaissance activities in his unit. The use of the above forms is strongly recommended.

The Cavalry School has prepared a notebook or log entitled *"Reconnaissance Instructions and Work Sheets."* The purpose of this reconnaissance log is to train the reconnaissance patrol leader in what to look for. The log is in loose-leaf form with a durable cover. It can be folded and placed in dispatch case or saddle bag. On the cover are listed items of information which the commander usually wants to know. The collection of information concerning these items should be SOP for all reconnaissance units. Under each item of information is listed everything a commander desires to know concerning the item. For instance, under item number 7—*Landing Fields;* the following appears concerning landing fields:

Airports—Airdromes—Landing Fields

(State which)

1. Location.
2. Dimensions (width and length).
3. Type, number, and condition of runways (dirt, gravel, pavement, asphalt).

by Lieutenant Colonel Allen D. Hulse, Cavalry

2d Cav Div
York, Pa. (395-765)
1600, April 6, 1943

INTELLIGENCE INSTRUCTIONS

No. 1-D
To: CO Rcn Det No. 1 (92d Rcn Sq) Effective 0500 April 7 1943
Maps: Special Map A. Strategic Map, Gettysburg–Richmond, 1 inch = 4 miles, Gettysburg Sheet

REPORT ALL INFORMATION OF THE ENEMY AND IMPORTANT FACTS ABOUT THE TERRAIN WITH PARTICULAR ATTENTION TO THE ITEMS CHECKED (√) BELOW.	**Special Instructions** (AREAS AND ROADS TO BE OBSERVED, IF NOT INCLUDED IN UNIT'S NORMAL SECTOR OF OBSERVATION. SPECIAL INTELLIGENCE ACTIVITIES. HOUR AND DESTINATION OF REPORTS.)
1. RAILROADS—Traffic densities, detrainments. 2. CONCENTRATION AREAS—Location, strength and composition of troops, activities, movements into, movements from. 3. ASSEMBLY AREAS—Location, strength, and	a. Move at 0500, April 7 to the line: Blue Ridge Summit (310-730)-Thurmont (330-710)-Western Maryland Railroad.

Sample form for Reconnaissance Training.

4. Type, number, and approximate size of hangars and other buildings.
5. Extent of natural cover and concealment for planes.
6. Repair shop and servicing facilities available.
7. Existing communication facilities—radio, telephone, telegraph, teletype.
8. General kinds and approximate quantities of supplies on hand—fuel, oil, water, etc.

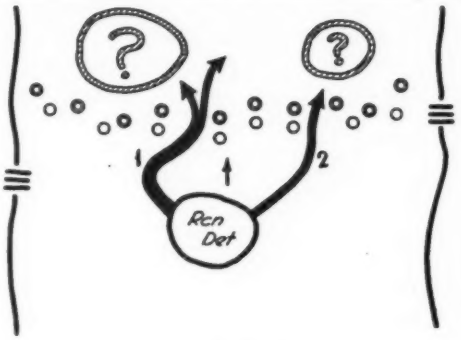
Obviously a detailed reconnaissance of a landing field following the above form would result in a wealth of information. The other items of information are similarly expanded so that the reconnaissance patrol leader may find out practically *everything* the commander wants to know about a specific item. Obviously, the log should not be taken into active combat. The use of the log in training, however, is recommended. It will aid the reconnaissance unit commander in teaching subordinate leaders to *look*, and *what to look for*.

EXECUTION

The reconnaissance unit commander cannot, in general, be bound to any particular method of carrying out his mission. There is a great variety of methods, depending again upon the terrain and the actions of the enemy. Generally a line or wave of reconnaissance patrols, followed by the reconnaissance detachment, advances rapidly toward the enemy. The speed of the patrols is regulated and controlled by phase or report lines. Initially, the patrols must move as rapidly as practicable. Every minute wasted decreases the distance between the main bodies and, therefore, reduces the freedom of action of the higher commander. Support units initially march approximately in the middle of the reconnaissance zone, prepared to move rapidly to any critical area.

Hostile reconnaissance and security patrols are avoided if possible. Terrain must be used to the best possible advantage. Patrol leaders must keep the mission in mind continuously. They must contact the *major* units of the enemy. Their successive messages and the results of personal reconnaissance gradually form a picture in the mind of the detachment commander. The lines of the picture are here sharp, there vague. Now reconnaissance must be intensified. Additional patrols are sent out to obtain information which will broaden and brighten the picture of the enemy. In addition, as forward patrols contact major units of the enemy—an infantry battalion here or a cavalry squadron there—their zone or route reconnaissance phase is over. Now observing and maintaining contact, they must report every move made by the hostile unit. Other patrols, therefore, must be sent out to continue reconnaissance and to contact hostile units as yet unreported.

Combat On A Reconnaissance Mission
1-Break through to continue reconnaissance.
2-Develop an obscure situation.



Combat

As hostile resistance becomes stronger and security patrols more aggressive, reconnaissance enters the combat phase. Reconnaissance units engage in combat for two main reasons: either to develop an obscure position —force the enemy to show his hand—or to break through a hostile security screen so that reconnaissance may be continued deep into enemy controlled territory. Support elements, tanks, infantry, or artillery, are moved rapidly to a critical area and committed under the command of a designated officer or the reconnaissance detachment commander himself.

If the hostile position proves to be too strong, the reconnaissance detachment commander must be prepared to break off action and to withdraw, leaving a patrol or two in observation. For, after all, has he not accomplished his purpose? The enemy has been forced to fight and thus disclose his dispositions and perhaps the locations of his stronger elements. This is the information the higher commander wants.

Lest we forget, detailed reconnaissance in the presence of the enemy is executed *dismounted*. The man on the ground is not only master of the battlefield, he is also the most effective and reliable intelligence agent. Air reconnaissance gives us an instantaneous picture of the enemy over a wide area. Weather, terrain, and hostile antiaircraft measures handicap the aircraft. Vehicular reconnaissance gives us distant ground reconnaissance. The most fanatical mechanized soldier, however, will admit that he obtains little information while moving in his vehicle. He must dismount and reconnoiter on *foot*. The same applies to horse reconnaissance. The accepted rule is—march as fast as possible but reconnoiter dismounted.

These fundamentals carry over into special operations—reconnaissance in the desert, jungle, and mountains.

Desert Reconnaissance

Reconnaissance patrols in the desert are normally vehicular. They move rapidly across country in widely dispersed formations. Lack of terrain features may limit the use of zones and phase lines for control. Compass direction and march rate must provide control. Supplies —fuel, water, and ammunition—must be carried in sufficient quantity to last for the duration of the mission.

The famous "Desert Rats," army reconnaissance units of the British Eighth Army, frequently spent weeks at a time operating in the rear or on the flanks of Rommel's Army, before returning to the Eighth Army for rest and resupply. Messages to the higher headquarters are normally sent by radio because of the great distances involved. Colored flags are widely used for local control. Dismounted reconnaissance during daylight must be cautious. The dismounted patrol may easily be captured or destroyed by a motorized enemy. Close coöperation between air and ground reconnaissance agencies is imperative.

Jungle Reconnaissance

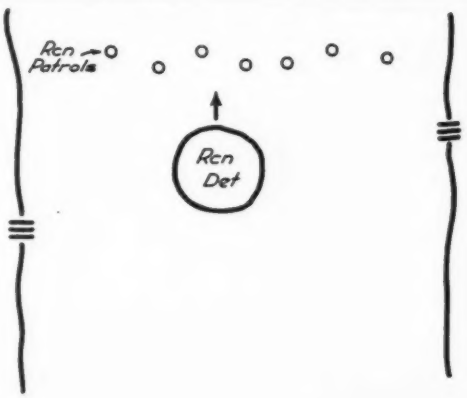
Reconnaissance patrols in the jungle are normally dismounted. They vary in size from two men to a platoon. The three man patrol, one member being a specially trained intelligence scout, is considered ideal by the Marines who made the initial landing on Guadalcanal. The patrol must move in close formation and must use swamps, rivers, and hills not as obstacles, but as avenues of approach.

Frequently, reconnaissance patrols are sent out in successive waves, a favorite method of the Japanese. This provides for the support and security of forward patrols and provides also for continued reconnaissance if leading patrols are lost or ambushed. The use of air reconnaissance is obviously limited in the jungle. The value of radio communication is also minimized. Even the portable radio may prove too bulky, and the close contact with the enemy makes use of voice or key dangerous. Training for jungle reconnaissance must stress night operations, training in patience, and training in maintaining direction, day or night.

Mountain Reconnaissance

Reconnaissance in mountainous terrain may be accomplished by horse or vehicular units in summer and

Reconnaissance - Initial Disposition



by dismounted units on skis in the winter. Reconnaissance patrols must be strong in combat power and, again, must carry with them supplies for the duration of the mission if the terrain is barren of wild life or other natural food or forage. Equipment must be light and durable, clothing light and warm.

Wooded areas restrict the use of air reconnaissance to the same extent as does the jungle. The radio, however, may be widely used for communication. The reconnaissance patrol moves rapidly from one observation point to the next in column or open formation as the terrain permits. When contact with the enemy is gained, reconnaissance must be made on foot.

Supply in these special operations is extremely difficult. The reconnaissance patrol will frequently contact enemy supply dumps, truck parks, and other rear installations, the destruction or capture of which may seriously handicap the enemy. Often, therefore, reconnaissance over special types of terrain may have the secondary mission of combat.

Conclusion

The principles of reconnaissance are not changing. Modern equipment and methods have simply required a different application of some of the principles. Modernizing influences in the current war include: the use of the fifth column—coördination of reconnaissance units, operating deep into hostile territory, with fifth column agents; the expanded influence of air reconnaissance and the development of the air-ground reconnaissance team; the use of armored vehicles for reconnaissance; and the coördination of reconnaissance agencies in different arms and echelons to insure mutual coöperation, to provide for a "reconnaissance reserve," and to avoid duplication of effort.

Reconnaissance forces are the eyes and ears of the commander. It therefore behooves the commander to select reconnaissance personnel with great care. Reconnaissance training should be centralized. Its aim should be the development of initiative, mental mobility, and resourcefulness. The German Army early recognized the great part that reconnaissance plays in modern war. In 1941 the following was extracted from an official German Army journal:

"Reconnaissance requires of both officers and men a degree of decision, of independent thinking and action, of broad technical knowledge and military skill, such as is required of no other soldier."

The Good Instructor*

The soldier is the individual link from which the whole chain of the Army's organization is built.

The man primarily responsible for the forging process is the instructor. His rôle is a most vital one and should, therefore, be fully understood.

Many instructors lose sight of the fact that the man of today was a boy of 15 when the war started. It is not at all surprising, therefore, that he should be somewhat mystified as to the meaning of all this fighting. It should be remembered that 18 is a highly impressionable age, and that he is now expected to mould the soldier and, what is more important, the man.

The man who does not understand the *cause* for which he fights can never possess sound morale. The instructor can help in this direction by giving a brief explanation of the causes which led up to the war, the reasons for our failures so far, and at the same time point out that, no matter *what* the reasons are, our goal remains the same—the defeat of the Axis Powers. He should endeavor to discover his students' outlook and points of view by organized discussion, and at the same time make it clear that "points of view" would go by the board should Hitler win.

The instructor must always be up to the mark—keen, efficient, enthusiastic and *inspiring;* otherwise, he cannot hope to obtain the best results. In short, he must be the "pattern" upon which the men under instruction will be expected to shape themselves. When teaching, no matter how good he may be (or thinks he may be), a lesson should always be prepared beforehand. Marshal the facts, excluding everything irrelevant to the subject to be taught. At the same time, preparation must be flexible, in accordance with the capabilities of the students.

He should never take his own knowledge for granted and assume too much when teaching; remember that this is something entirely new to the men.

He must never lose sight of his own experiences as a recruit, or become too impatient with the man who is rather slow in absorbing knowledge. Some men take time to "digest" what they have learned, and yet often possess the best memories.

He must never forget that a squad is composed of individuals, drawn in most cases from widely different environments. His job is to blend them into *unity*.

The men must be encouraged to find out the answers for themselves. Knowledge thus gained is more easily retained than a mere parrot-like recital of the facts.

The aim must always be *collaboration,* and not a slavish submission to a dull routine.

It is the duty of every instructor, interested in his work, to take frequent stock of his own knowledge and, if necessary, bring himself up to date. He will probably never know all the answers; he can at least endeavor to know them.

*Courtesy, *The Tank*.

HORSE BREEDING

Conditions in Europe

What are they? From Poland, Norway, Denmark, Holland, France and Belgium, horses have been bought or requisitioned in great numbers and exported to Germany—where they are used for agriculture, draft, and war.

*by J. Clyde Marquis**

THE progress of horse breeding in European countries since 1938 has been seriously hindered by German requisitions and unsettled conditions. Recent reports indicate that as a result of the shortage of horses caused by army requisitions, there has been an increasing use of cows for farm work in addition to the oxen normally used.

The concensus on the problem of rebuilding European livestock after the war generally is that it is primarily a matter of encouraging natural increase, and that relief by livestock shipments from overseas, while valuable, particularly for certain countries, would be limited by shipping facilities to relatively small numbers.

Alternate measures suggested are:

1. Restriction of slaughter of breeding stock, (for application principally to stock other than horses).
2. Expansion of veterinary facilities to reduce losses from diseases.
3. Importation of animals from near-by countries, primarily Axis countries.
4. Encouragment of artificial insemination.

Details of breeding plans contemplated since 1938, by the different countries, are not available. However, the following information gathered from various sources is of some interest.

Germany

The total draft work (presumably in 1941-42) performed in Germany was 3.92 billion horsepower-hours per year, of which 88.7 per cent was done by draft animals, distributed as follows in percentages:

	Per cent
Horses	71.5
Oxen	7.7
Cows	9.5
Total	88.7
Tractors	11.3

The percentage of tractors used on farms of different sizes was as follows:

0.5 to 2 hectares (1 to 10 acres)	3.6
2 to 5 " (11 to 48 ")	1.8
5 to 20 " (12 to 49 ")	11.03
Over 100 " (247 ")	32.35

Following the various campaigns of Germany in the East, North, and West, it is stated that a large number of horses, requisitioned by the Germans in Poland, France, Holland and Belgium, were brought to Germany and sold to German farmers and other users of horses. Consequently, many foreign horses now have German masters. The new owners were cautioned by the authorities that at first, difficulty would be encountered in making these horses understand directions, and advice was given on how to teach the animals to take commands in German.

Formerly, Germany imported all the mules used. About three years ago (1937), the first mule foal was born at Graditz-Repitz, where a stud had been estab-

*Foreign Information and Statistics, U. S. Department of Agriculture.

lished near Torgau, Prussian Province of Saxony. By means of asses imported from Italy and America, breeding activities were expanded, and it is stated that Germany is now nearly self-sufficient as regards the mule requirements of the Germany Army. The mule foals are kept at Graditz-Repitz only a few months and then are sent to the Bavarian Alps to become accustomed to their future field of activity. There they are also trained for military purposes.

France

The Germans have already taken many horses out of France, and last summer were threatening the wholesale requisition of horses if the farmers continued to resist. The German Re-Mount Service negotiated with the French Government (Vichy) for the right to buy horses to replace motor traction in Russia the following winter. The French Government, in order to help the farmers and curb speculation, had fixed a maximum price of 36,000 francs (about $82) for a horse. A year earlier, horses cost only 10,000 francs ($23). The Germans asked the suspension of the fixed price in their favor to allow them to offer 40,000 francs ($91), and also asked that they be given prior rights in the markets.

That was not enough, so they increased their offer to 50,000 francs ($114) and finally to 55,000 francs ($125). Still, they were unable to get enough horses, so they advertised in the French press that if they could not get enough horses, they would resort to requisitioning. Free France did not produce enough hay and grain for winter feeding. Consequently, there has been a heavy mortality of animals, believed to be equivalent to 4 per cent monthly. Stock breeding had virtually halted by last summer. According to the latest census, France had the following numbers of breeding stock:

	November 1929
Stallions for breeding	5,835
Draft horses	177,591
Stallions for breeding and work	11,674
Geldings	936,787
Mares for breeding	45,494
Mares for breeding and work	579,794
For producing mules	22,361
For work only	543,606
Other horses	172,942
Stud stock	3,414
Army	71,815
1-3 years	369,140
Under 1 year	195,156
Total	3,135,609

Of the total number on hand, 2,887,438 were described as farm animals. The principal breeds of horses were as follows:

Breton over	140,000
Maine over	110,000
Trait du Nord (Northern draft)	120,000
Normandy	80,000
Boulonnais	70,000

Farm horses of 3 years and over numbered 2,323,000.

Czechoslovakia (former)

At present, it is considered important to import horses for breeding, especially of the Belgian, Nonius, English, and Arab half-blood breeds. No large decrease in numbers has occurred. The principal breeds with the location are as follows:

Bohemia-Moravia Protectorate

Belgian—heavy draft
Oldenburg—medium draft
English—half-blood—light draft
(Moravia especially)

Slovakia

Nonius—medium draft
English, Arab and Anglo
Arab half-bloods and Lepizan (light draft)

Sub-Carpathian Russia

Huzul (Suitable for carrying loads)
Stallions kept for breeding 1936—1,533 head.

Poland

At present, it is estimated that there are about 40 per cent fewer horses in Poland than prior to the war. Prior to the war, the horse population was as follows:

One year and under	296,000
1-3 years	292,000
3-4 years	182,000
4 years and over	3,120,000
Total	3,890,000

Of the total, 2,982,000 were in rural areas.

There has been a complete requisitioning of horses since Russia entered the war. *The Germans have requisitioned all possible horses in central Europe for the Eastern Front.* In order to resume normal farming in Poland, about 4 million horses must be returned to that country. The best sources are Germany, Hungary, Sweden, and the Middle East. The most suitable types to be found outside Europe are in North Africa, South America, and light breeds from the United States and Canada.

Lack of horses in other European countries and lack of ships and difficulties of shipping overseas will make it difficult to import the necessary number of horses.

Denmark

Denmark has been required to export a large number of horses to Germany. During the period October 1,

1941, to September 30, 1942, 15,700 horses were so exported. In 1942, approximately 14,900 horses were released compared with 16,000 in 1941 and an average of 6,000 for the years 1930-34. Originally, 20,000 horses were to have been moved, but notwithstanding favorable prices, Danish owners were unable to supply that many. About 24,000 draft horses are in use in Danish towns at present. Exports are destined almost entirely for Germany and German-occupied territories in the East.

The abnormal fodder situation in the spring and early summer of 1942 caused extraordinary losses of colts as well as of other young animals. Colts are needed to replace horses that have been sold (presumably to the Germans). The death rate among colts in the Holback district was estimated at 40 to 50 per cent of the number of births.

Norway

More Norwegian horses have been bought recently by German authorities, both for export and for the *Wehrmacht* in Germany. Thus a severe shortage of horses has developed in Norway for farm work owing to both the German requisitions and to the need for horses for forest work as a result of the fuel shortage. Many Norwegian farmers will be forced to use cows for plowing this spring and such an improvisation is being encouraged by the Minister of Agriculture.

Spain

The Minister of Agriculture stated last summer that the number of horses in urban areas was in excess of that which could be fed from available fodder supplies. At the same time the number of farm mules has fallen at least 60,000 head below actual needs. This shortage is being aggravated by the fact that while the mortality rate is exceeding the birth rate, farm mules cannot be imported. The number of horses has decreased materially since pre-civil-war days and, at the end of 1941, were 27 per cent less than in 1934.

Portugal

There was an appreciable decrease in livestock numbers in Portugal in 1941-42; the decline amounted to as much as 30 per cent in horses, mules and oxen. This decrease may be attributed to larger "on the hoof" exports to Spain and a virtual suspension of imports of draft animals from the colonies.

Greece

The Greek horse derives its origin from the horses of Hungary, Italy, Bosnia, Algiers, Tunis and Asia Minor. The crossing has been so irregular that the typical horse today represents an heterogeneous mixture of various races. The animals are small and incline more or less to the oriental type. Only on the plains of Thessaly, Ilis and Argos are found animals of good build. The different breeds of horses in Greece are described as follows:

Skyros pony—Island of Skyros is the place of origin. They are strong, hardy, agile, spirited and intelligent and are raised throughout the year under primitive and semi-savage conditions. They forage for food and water like goats.

Pindus horse—Raised by the nomads in the Pindos mountains. Herds consist mainly of mares and foals. Under the hard conditions of their normal way of breeding, they are small, but if given ample nourishment at an early age would develop into the heavier type of the western European horse.

Foreign breeds—Outstanding foreign breeds used for agricultural work are the Hungarian horses of the Nonius and Lippitza breeds.

Russia

In relation to the total number of animals on collective farms in Russia, there are more horses than any other livestock. Early in March of 1942, norms were fixed for field work by horses, oxen and cows as draft animals with certain inducements offered for this use. The number of draft animals was to be supplemented by the use of cows for plowing and by increasing the number of bullocks to replace horses requisitioned by the army. There is a serious shortage of tractors.

Agricultural leaders of Volhynia and Pedolia stated at a recent conference that 1,780 stallions and 4,066 mares had been selected for breeding; also, that 3,395 head of red cattle and 3,398 of black and white had been purchased from farmers and segregated into 179 herds. These measures will form the foundation of future development of breeding. To increase the stock of draft animals, 16,500 colts and 10,500 oxen were placed in the so-called colt and oxen farms.

Because Hitler needs all of the horses that he can get, portable X-ray machines have been rushed to the Eastern Front to determine the nature of an injury immediately.

European.

Wild Horses Join the Army "w

ROUNDED up from the open ranges of frontier Australia, a herd of wild broncos is turned over to the American Army for basic training. These horses, many of which have never seen a human being before, are first run into the river for a cleansing, soothing bath. Then follows the "breaking," which American soldiers prefer to call "gentling," and which is handled as humanely as possible. The horse is allowed to become accustomed to the nearness of mankind, and then is run into a corral and haltered.

The next step is to accustom him to the feel of the saddle. Then he is released, and allowed a chance to get accustomed to the saddle. The next event on the program is to turn the horse over to an Australian breaker who uses the methods of the American bronco-buster.

After this period, which rarely lasts longer than two weeks, the horse is given a "GI" haircut and started on advanced training. He is taught to carry any one of the six component parts of a broken-down 75mm pack howitzer and other matériel and supplies, and to take his place in the line. Only occasionally is a foal born in this outfit, but such naturally become the pets of the regiment.

Official U. S. Army Signal Corps Photos

Horses from the open range are guided into a near-by stream by Australian horsemen.

Horses are being given a bath after unloading them from freight cars in the depot area.

Some of the wild ones object to being a friend to mankind.

"wn Under"

A few weeks of gentling soon changes their attitude.

Official U. S. Army Signal Corps Photos

This one got loose but quieted down later.

On maneuvers, horses a given a drink near t picket line, while they being rested fr the weight their packs.

The pack train continues its trek across a stream in the Australian hinterland. As well as food and ammunition, horses carry 75mm pack howitzers broken up into six component parts.

The Air-Cavalry Team in R

Tactical Aviation—the modern Pegasus—works with all ground arms, but his coöperation with Cavalry has an effectiveness born of close kinship.

LITTLE is known of the war record of the legendary winged steed, Pegasus, but it is probable that he flew many a military mission before he was tamed by the Muses. He could operate in three dimensions with superior mobility, and he had power. Did he not kick a hole in Mount Helicon? Weather limited his operations, and at night he was not very effective. His wings were fragile and he probably required 100-octane oats. Nevertheless, he must have been exceedingly useful in those heroic Olympian campaigns prior to the Trojan War.

Today, Pegasus is with us again. We call him Tactical Aviation. As before, he operates far and wide; he fights, harasses, raids, observes, screens, delays, exploits, and pursues.

Tactical aviation now includes virtually all types of operational airplanes, except the heaviest bombers. Combat experience indicates that small, fast, fighter-type airplanes are the most useful for reconnaissance. Two-seated fighters can carry observers over the enemy lines. Single seaters, capable of reaching high altitudes and of avoiding enemy fire and combat aircraft, make effective photographic planes. Fighters, fighter-bombers, and medium bombers are reported most useful for close coöperation with ground troops in combat. For liaison work behind the lines and for employment as mobile observation posts, light machines, capable of operating from small fields, have been of considerable value.

Three Phases of the Air Situation

The ground commander who keeps abreast of the air situation in the theater of operations generally will be able to estimate the when and the where of air support with reasonable accuracy. He must observe the progress of three phases of air action in arriving at his estimate of the time when his requests for air missions will be granted:

Phase 1

Neutralization of the enemy air force in army's area of decisive action.

Phase 2

Isolation of the enemy's front at the point of decisive action.

Phase 3

Close support of ground forces.

In some situations, ground forces will find it difficult and inadvisable to move until supporting aviation beats down the enemy's air force. In others, cavalry and other action may be started while the struggle for control of the air is in progress. In the latter case, the supreme commander must make a decision as to the amount of aviation that he can spare to help the ground force commander. This will not be a simple matter, because assignment of direct supporting combat missions at this stage weakens the air force then struggling for superiority. Furthermore, *few effective reconnaissance missions can be flown for ground units as long as the sky swarms with enemy fighters.*

Need for Priorities in Air Missions

After freedom of action is gained by neutralization of the enemy's air force, the supreme commander, with the assistance of his air commander, again faces a difficult problem involving allocation of air missions. Common sense requires that he apply the bulk of his air strength to the support of the ground unit making the main effort, but other units, particularly cavalry, require a certain irreducible minimum of aviation in order to see. The decision as to this minimum air support will vary in almost every situation. Often it may consist of a small amount of "look and run" reconnaissance or photographic aviation only.

In a situation in which a cavalry division of an army is called upon to perform the traditional mission of finding and fixing the enemy's main body, the cavalry may be the first ground element to obtain direct assistance from aviation. Whether it be mechanized cavalry or horse cavalry, it will find that every properly planned flight can extend its vision and multiply its ability to move and fight.

Normally, the cavalry commander can expect to be furnished information and photographs obtained by the air force in the course of its fight for control, and any aerial map substitutes that may have been obtained during the planning of the combined operation. Reports of "softening" attacks against the enemy's strategic installations also will help him in his estimate of the situation. A thorough familiarity with all the preliminary aerial operations is necessary in planning his own fight and in deciding what missions he will request of the supporting aviation when it is available.

n Reconnaissance

by Major Roy C. Flannagan
Infantry*

In preparing for his operation, the cavalry commander must keep constantly in mind the possibility that weather or a sudden change in the air situation in the theater may deprive him of all or part of his air support. He plans with a view to using aviation to the maximum if it is there, and to accomplishing his mission without it if he must. Aerial reconnaissance often is like a pair of super-power binoculars—convenient to have as extra equipment but not indispensable in every situation. Combat air support is highly elastic supplementary fire power, but a ground mist at zero hour can render it useless.

In requesting aerial reconnaissance, the commander normally will ask the aviation to perform *missions beyond the capabilities of ground agencies*. Likewise, he will be careful with the priority of his requests so that if only a few mission requests can be granted, these will be the most useful to him. Similarly, he will take pains with his plans for any combat air missions that may be available. It would be uneconomical to ask for assistance except at critical points against targets that offer the most formidable obstacle to accomplishment of the ground mission. Normally the most profitable air targets are important enemy concentrations or installations beyond the range of ground weapons.

The "Process" Machinery for Air Reconnaissance

Reconnaissance missions rarely are combined with combat missions, although reconnaissance planes may be used against targets of opportunity if the risk is worth the effort. Combat aviation, on the other hand, though its mission is not primarily reconnaissance, often brings back enemy information and photographs obtained during its flight to and from the target area.

The cavalry commander's requests for air support are processed like those of any other subordinate command of the army. He consults the officer of the air support or liaison party which has been assigned to his unit; receives from him the latest information as to the status of the "air war" and as to the capabilities of the air support command to help him. The air officer will know how much aviation is available to support the army, and generally he will know something about the weather and other factors in the air situation. He will be much interested in the cavalry missions, because much may parallel the mission of the air support command. In "isolating the front," the air support command first must find the front with the help of the cavalry.

The machinery by which a cavalry commander's requests are sent back to the air support command is similar to that which other ground commanders employ. The request goes to air support control, to air support command, and to army commander for approval before it reaches the airdrome and the aviation unit that will fly the mission. Therefore, the wide dispersion of cavalry increases communication difficulties.

Normally, the cavalry division commander will anticipate many of the needs of his units for aerial information and cover their principal requirements in his plan for the operation. On the other hand, a good air plan cannot be completed until a considerable number of mission requests, which originate in the regiment, squadron, and troop, reach division headquarters and are studied and coördinated. The general scheme for air-cavalry teamwork, therefore, is made up of plans which originate at both ends of the chain of command.

The When, Where, and How Much of Air Support

Because of the high performance of modern aircraft, the occasions when air support can be decentralized to units smaller than a division will be rare in future. It manifestly would be inadvisable to assign a large unit of 400 mile-per-hour planes to exclusive operations on the front of a squadron or battalion, even if that front were extended to maximum limits. A single fast reconnaissance plane is capable of covering three hundred miles or more of front, road, or river line in one sortie of less than an hour's duration. Furthermore, as an additional incentive toward the economical use of reconnaissance missions, it may be necessary to provide each look-and-run plane with fighter protection because even a crippled enemy will try to prevent aerial surveillance of his vital installations and his important movements.

As with reconnaissance aviation support, so it may be with combat support. When the cavalry must fight, it can use fighter-bombers and bombers as effectively as other ground units, but the commander can expect only on extraordinary occasions to have an umbrella to aid him in strafing his opponent or protect him from strafing. If his fight coincides with the aerial effort to isolate the front, if he is on a critical mission such as establishing an important bridgehead, or if he is exploiting a break-through or leading a pursuit, he probably will receive support from combat aviation. Otherwise his calls for support, however important air missions may be to his particular operation, all may be placed in a low priority.

During American operations in Tunisia, ground unit commanders often reproached their air support officers without understanding why there was no aviation available. German planes sometimes strafed our ground positions at will and made a nuisance of themselves. It was only later when the complete story was told that the ground commanders realized how concentrations of air power at the point of successive main efforts had broken the enemy's air force, helped breach the Mareth line, and helped clear the way to Bizerte and Tunis. These concentrations would not have been

*Air Support Branch, Headquarters Army Ground Forces.

possible if British and American air power had been dispersed along the front.

While it is improbable that air support will be available at *every* stage of an operation, it is virtually certain that it will be available during *some* stage of every operation. It is for the latter that cavalry and other units must train with painstaking patience. The training problem is essentially that of teaming a 400 mile-per-hour force with another force that can move at 25 miles-per-hour or less, and doing it without sacrificing any of the capabilities of either. This is a formidable task.

In reconnaissance, aviation and cavalry supplement each other's efforts like two players on the same team. Airmen cover much more territory than cavalrymen, but the latter can look longer and discover negative information that the aviator cannot report with assurance. Obstacles which temporarily may halt a ground patrol do not bother the flyers, but on a rainy day the pilots must remain grounded, while the cavalry continues to operate. Between the two, however, they can get the reconnaissance job done—sometimes in a remarkably short tme.

In combat, the methods of the two arms differ materially. Action by air against small targets such as deployed troops generally is unprofitable, although attack aircraft effectively neutralize deployed units. The flyers must hit quickly and withdraw to reload. The aviation cannot make a sustained effort unless airplanes are available in large numbers. Favored battlefield targets are vehicle parks, convoys, bivouacs, and supply points and traffic centers.

Communications and Distributions

Training of the cavalry-air team calls for particular attention to communications. Figured in the problem are several kinds of radios including the very high frequency sets most useful for air-to-ground messages. Visual signals also come into the picture because the smallest ground units may be called upon at times to identify themselves, or to point out a target area to aircraft speeding overhead. The colored smoke grenade thus far has been the most effective ground-to-air visual device, but fluorescent ground panels of distinctive color have been used with success in training. Airmen can identify themselves visually by predetermined movements of their planes in flight, or by lights or pyrotechnics.

All this is not as simple as it seems, because of the tactical considerations already mentioned. Without the most careful teamwork, hedge-hopping planes will be unable to spot ground signals, and cavalrymen will be tempted to turn their weapons on friendly planes which suddenly whiz over a near-by ridge. In some situations, bomb safety lines must be marked by artillery smoke far in advance of the ground troops, and the latter must be forbidden to fire at any plane unless it starts to commit a hostile act.

The wise cavalry commander will pay much attention to aerial photography in his team training because frequently the only reliable intelligence from the air will come to him in this form. Pilots and observers can see but little of the enemy under ordinary flying conditions. Much dependence, therefore, must be placed upon photographs. The G-2 of the future who cannot interpret film strips and pin-point pictures will be at a great disadvantage against an enemy who can tell the difference between a half-track and a tank on a photograph taken at 30,000 feet.

Closely allied with the problem of quick communication, is that of distributing information, including aerial photographs. Forward elements generally need reconnaissance photographs most. The picture that enables them to make map corrections, to determine the condition of roads and bridges, and to locate objectives on the enemy side of the lines, often must be requested many hours in advance. Thereafter the photographs must be processed, reproduced, and delivered by ground or aerial messenger to a unit which often is hard to find quickly because it has had to change its position several times since the mission was requested. It is necessary also to distribute quickly to advanced units any helpful aerial photographs that have been taken by request of the division, corps, or army commander.

Conclusion

While recent experience inevitably has rendered obsolete certain equipment and some of the methods formerly employed, the basic doctrine expressed in FM 31-35, *Aviation in Support of Ground Troops,* largely has survived the test of battle. The value of strategic action by aviation against distant targets, and of tactical action to isolate the battlefront has been demonstrated in Tunisia and in the Pacific theaters. Furthermore, the overpowering use of close-in air support at the critical point on the battlefield was a major factor. Surprise was made possible by knocking out the enemy's aviation and blinding his army. Thereafter, the supplementary fire power and morale effect of combat aviation materially assisted during the decisive struggle.

Observers have reported that air power was a dominant factor in the break-through of the New Zealand division of Montgomery's Eighth Army at El Hamma, and in the final drive of the First Army and the American II Corps upon Bizerte.

Sky cavalry, the aerial reconnaissance squadrons which make the first contact in battle, must contain the fastest and most maneuverable aircraft obtainable. The units that coöperate most closely with ground troops have become *corps d'elite.* As for the heavy dragoons of the air force, the fighter bombers, they, too, have become battle factors as vital in warfare as once were Napoleon's *cuirassiers*—and as picturesque.

Pegasus, living in retirement on Parnassus, doubtless is very proud indeed of the flying horses of 1943.

Weapons and Realism

*by 1st Lieutenant Yale Soifer**

". . . In your training, put your time and emphasis on the squad and platoon. . . . Teach not to waste ammunition. Learn to make every shot count. . . . The Jap has a great deal of respect for our hand grenades. . . ." — FIGHTING ON GUADALCANAL, 1943.

BECAUSE of the global aspect of modern war, an army service school must be able and ready to make frequent changes in its doctrines of instruction. Combat tactics applicable to one theater of operations may not be successful in another theater. A service school, therefore, must prepare the graduates of its officer, officer candidate, and enlisted courses for any eventuality of destination that may be their assignment.

All such instructional changes can be based on only one source—*the lessons our fighting men are learning over there.*

In the light of these lessons, the Weapons Department of the Cavalry School has made many additions to its program in the past few months. In general, the instructional methods in firing the weapon and in the mechanical training and functioning of the piece has not changed. But added to these is a new realism that gives the student a close approximation of the experiences that future battles hold for him.

These new courses may be grouped into three phases —new weapons adopted or in a stage of tentative adoption by cavalry units; small arms battle firing; and small unit tactics. Specifically, these include the following:

1. New Cavalry Weapons
   a. Carbine, Cal. .30 M1.
   b. 75mm Howitzer, Assault Gun.
   c. Grenades.
      (1) Hand
      (2) Rifle
      (3) Rocket
      (4) Improvised

2. Small Arms Battle Firing (With Live Ammunition)
   a. Grenade Throwing
   b. Village Fighting
   c. Infiltration Course
   d. Small Arms Battle Firing

3. Small Unit Tactics

A seven day combat course combining small unit tactics with weapons instruction is included. The employ-

Two officer candidates enter door of a house during combat reconnaissance of the Village Fighting Course. One man, with pistol, opens door and covers entrance of submachine gunner.

*Weapons Department, The Cavalry School.

Mutual protection during a squad's advance through the village. A time bomb or booby-trap may go off at any minute and these officer candidates are ready for anything.

ment, emplacement and battlefield use of all arms in the squads, sections, and platoons of mechanized and horse combat elements is emphasized. *Only live ammunition is used during these tactical exercises.*

New Cavalry Weapons

Instruction in the M1 carbine, the 75mm howitzer, and grenades, follows the established sequence of basic fundamentals: first, mechanical training, functioning, and technique of fire; then, the firing of range problems that emphasize manipulation, fire adjustment, and manufacturing and throwing grenades.

Because of restricted facilities, the 75mm assault gun instruction consists of only limited practical work by the students and demonstration of firing and tactical employment. This instruction is augmented by the use of slides, charts, and "jumbo" models of the weapons parts. The student, therefore, can become thoroughly informed of the details and theory in the functioning of the gun. Sights, instruments, ballistics, dispersion, direct and indirect fire, fire orders, and adjustment of fire are all included in the course.

The grenade course covers all types of grenades employed by cavalry units. A practical exercise in grenade manufacturing and throwing familiarizes the student with hand grenades (fragmentation, chemical, incendiary, and offensive); rifle grenades (fragmentation and antitank); launcher grenades (antitank); and improvised grenades (gasoline bottle, Molotov cocktail, tin can, and nail grenades).

Various experiments are being carried on with the rocket launcher for use by cavalry. A demonstration with the rocket launcher for the students enables them to learn of its firing methods and its penetrating qualities. The rifle grenade is also shown. It is fired from all positions, with special emphasis given to the methods of aiming and sight adjustment. Both practical demonstrations are preceded by conferences dealing with the description, nomenclature and functioning of these special weapons.

Small Arms Battle Firing

Following their basic instruction, students proceed to small arms combat ranges and, with live ammunition, put to practical use what they have learned. A grenade throwing course, which emphasizes the importance of the proper method of throwing hand grenades, has been built. A simulated village of forty buildings has been constructed, where students, carrying loaded submachine guns and pistols, encounter the conditions peculiar to combat reconnaissance in towns and villages. As a climax to this small arms firing, a machine gun infiltration course teaches the student the priceless lesson of keeping down when advancing under enemy fire.

In the grenade throwing period, each student, using dummy rounds, practices the various throwing positions. Following this dry run, a live fragmentation grenade is thrown by each at a stone tank and stone pill box target. Stress is placed on methods of throwing, timing, making use of trenches and fox holes, and accuracy.

Each man, armed with either pistol, carbine, or submachine gun, goes through the village area firing live ammunition at surprise targets. Demolition bombs, booby-traps, and smoke shells bring realism to the period. One squad at a time, under a student leader, goes through the village. Strong emphasis is placed on individual protective fire, care in entering and circling buildings, reconnoitering windows, and accuracy in quick firing.

During its advance, the squad is taught to stay out of the streets and open areas. To bring this point home, a constant cone of heavy machine gun fire is laid down the main thoroughfare as the squad advances. Instructors find that they have no great difficulty in putting this particular principle across. Explosives are used to represent mortar and artillery fire.

The infiltration course climaxes the student's small arms battle firing. An appointed leader is given the mission of taking an enemy position. He must make a plan and execute it. The plan includes the advance of the group (which is composed of two squads), under the cover of a ditch, until within one hundred yards of the enemy position. From there the leader must conduct his group across an area approximately seventy-five yards wide, through thick brush, under barbed wire entanglements, and over open terrain. They must creep and crawl in the direction of the enemy position, and assault only when within hand grenade throwing distance.

Three heavy machine guns from the enemy position lay down a steady burst of fire approximately thirty inches over the heads of the advancing men. Time bombs, firecrackers, and smoke shells are used to add to the realism. By the time that he has completed the advance, the student is well aware of the importance of creeping and crawling on his belly, watching for all available types of protective cover, and taking advan-

tage of terrain. Stress is placed on the control of the group by the leader.

Small Unit Tactics

Climaxing their weapons instruction, Officer Candidate and Basic Officers' Classes spend their last week in small unit tactics problems. These exercises place great emphasis on the employment, emplacement, and battlefield use of the weapons of the cavalry squad, section and platoon.

Every student is given some part in the daily problems and is detailed as the unit leader at least once. Using only live ammunition during these periods, students learn the principles of fire control, fire and movement of squads, sections and platoons, and control of the individual soldier. Conservation of ammunition is brought out realistically. Dismounting arms and men from their vehicles or horses, and crawling or rushing over rough terrain to put the guns into action is also part of the day's activities.

Each day finds a different combat unit of the mechanized cavalry stressed. One day the students work with a fully equipped reconnaissance section, each man and vehicle carrying its quota of ammunition. Another day the problem involves the employment of the assault gun section. When assault guns are not available, they are simulated by the use of 37mm one-pounders mounted on the rear of three-quarter weapons carriers. One day is devoted to stressing the employment of the .50 caliber machine guns and the emplacement and fire missions of the 81mm mortar squads. The series of exercises is climaxed by the employment of the reconnaissance platoon, supported by tanks and the assault gun section.

Horse classes move through the combat problems with fully equipped rifle and machine gun squads, sections, and platoons. One day is devoted to the antitank platoon, and the 37mm squad, section, and platoon, as well as the actual firing of the weapons. Particular emphasis is placed on offensive fire and movement and dismounted action for the horse classes.

During this course, an attempt is made to develop leaders who are capable of commanding squads, sections, and platoons. It is the corporal, the sergeant or the lieutenant who, with his unit, makes the first important contact with the enemy. There cannot be too much detail in training that stresses small unit control.

Conclusion

The Weapons Department of the Cavalry School endeavors to bring more and more of battlefield realism into its instruction. One of the first requisites for leaders and their noncommissioned officers in combat, is a thorough knowledge and proper employment of their weapons. The use of live ammunition on small unit tactical problems has proved an invaluable means of increasing the effectiveness of combat instruction.

Undoubtedly, tomorrow will bring other changes and new lessons. Whatever they may be, whatever alterations in program they may impose, the Weapons Course will endeavor to give tomorrow's leaders a thorough knowledge of cavalry weapons, mechanically and tactically. It will stress the importance of such knowledge and will attempt to bring to the fore in each individual the qualities of leadership necessary for combat command.

Students of an officer candidate class infiltrating toward enemy position under steady burst of machine gun fire, time bombs, and smoke shells.

Rail Loading Training

*by Lieutenant Donald G. Merritt**

A practical work course, in which student officers and officer candidates have the actual experience of loading a train with tank destroyer vehicles, is given by the Tactics Department of the Tank Destroyer School, under the heading of "Movement of TD Units by Rail."

In comparison with the actual value of the instruction, the equipment necessary to present the course is both inexpensive and readily available at any post. The setup used effectively by the TD School consists of three dummy flat cars and one box car, labeled "TDS-RR." The construction of these cars is shown in Figures 1-4. The flat cars are used primarily for practice vehicle loading, while the dummy box car is used to illustrate the proper installation of kitchen facilities, including both the old Field Range No. 1 and the new Field Range, M1937, as shown in Fig. 1. Six representative TD vehicles complete the demonstration equipment.

The instruction includes a one-hour conference and three hours of field demonstration and practical work. The conference outlines briefly the general procedure for TD rail movement. In addition to the details of command and staff procedure necessary for all rail movements, emphasis is also placed upon points deemed especially pertinent. Pre-loading preparations are stressed. Timely issuance of warning orders, and their essential details, is discussed. The instruction of picked unit loading crews in the early stages of their training is advocated to expedite movement in maneuver and in combat. The determination of a suitable vehicle loading order to meet any possible detraining situation is fully explained. Students are thoroughly acquainted with the loading sequence of personnel and equipment that will best provide for the type of operations necessary at the destination. Supervision and supply arrangements en route and at the detraining point, as well as counter-intelligence measures, are studied.

*Tank Destroyer School.

Figure 1.—Installation of the M-1937 Field Range as demonstrated on the "TDS-RR." Students are instructed in the method of blocking ranges and securing chains. Requirements for refueling, size and gauge of sheetmetal apron and fire protection are also explained.

Photo by Reproductions Dept., TDS

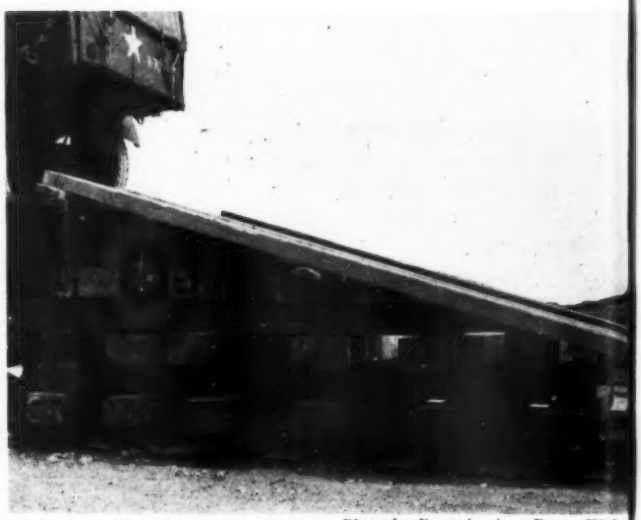


Photo by Reproductions Dept., TDS

Figure 2—Vehicle loading ramp, showing details of RR tie construction for car of average height. Treads are 2″ x 12″ planking double width, spiked fast. Ramp easily supports heavy M10 Destroyer.

Suggested forms for entraining tables are distributed. These forms, drawn up by the class instructors, are designed to expedite entrainment and have proved invaluable aids to TD entraining officers. The tables are clearly and briefly drawn up to include the number and type of cars necessary, cars assigned to units and their personnel and equipment, officer assignments, and entraining times. Included is a worksheet showing car serial numbers, length and capacity, and the length, type, weight and parent organization of all vehicles loaded. Thus the loading order can be laid out well in advance and completed quickly upon the arrival of the train.

At the end of the initial class hour, the students move to the field where they are formed into small groups. One group is detailed to build the loading and spanning ramps, and one to prepare the lashing wire and

Photo by Reproductions Dept., TDS

Figure 3—Details of blocking and securing of motorcycle and M-10 Destroyer as completed by OC students. No. 5 patterns (padded) are used on cycle wheels, and Nos. 2 and 3 on M-10. Note inexpensive construction of "TDS-RR."

blocks and to secure the vehicles that a third group will guide into position on the cars. Another group is assigned to check the loaded vehicles, and the fifth to inspect the cooking arrangements in the kitchen car.

The loading ramp is designed to support the heaviest TD vehicle, the M-10 destroyer. The ramp, shown in Fig. 2, is made of old railroad ties, a supply of which should be available at all loading locations. Technical details of the construction of the ramp, spanning ramps, and block patterns are available in FM 101-10, and in the Association of American Railroads handbook, "Rules Governing the Loading of Commodities on Open Top Cars." Here will also be found the approved use of patterns for different types of vehicles.

Vehicles loaded for demonstration purposes are the M-10, the ¼-ton, the 75mm gun on the half-track, the 2½-ton truck with 1-ton trailer, the 37mm gun on the ¾-ton truck, and the motorcycle. The students guide the vehicles up the ramp in a predetermined loading order, and spot them in their proper places on the cars. The required amount of space is left for brake-wheel clearance. Using the approved materials and methods for each type of vehicle, the securing crews then lash their assigned vehicles. The eight different patterns for blocks are demonstrated (see references above). Five of them are used for the TD vehicles. The blocks are made of hardwood or straight-grained pine, and are fastened with 5-inch nails to ensure proper security without danger of splitting the block. Eight gauge black annealed wire is used for the lashing.

The lashing crew is broken down into teams, one to each vehicle, and there is spirited competition over the best and speediest job. The M-10 requires little securing because of its weight. It is blocked at the front and the rear of each track, with No. 3 patterns. Three No. 2 patterns are used along the side of each tread, as shown in Fig. 3. In this connection, full or half-tracked vehicles must be inspected closely before blocking to ensure tightness of the track. Loose tracks may cause the vehicle to work clear of its blocks.

The ¼-ton truck, or passenger vehicles of similarly light construction, are secured by blocking all wheels front and rear with No. 3 blocks. No. 2 blocks, double height, are nailed along the side of each wheel, and all wheels are wired down. Burlap padding is inserted between the blocks and the tires to prevent chafing of the tire wall. Because of the light weight of this vehicle, a wire is also passed over the chassis, front and rear, to prevent sway.

The tracks on the 75mm SP gun are secured in the same manner as those on the M-10, except that a wire lashing is used from the suspension system to the flat car for additional security. The front wheels are blocked, using patterns 2 and 3, and are wired securely, as shown in Fig. 4. The 2½ and ¾-ton trucks, likewise, use the No. 2 and 3 patterns to block all wheels. Six wheels are blocked on the 2½-ton. Also wires are run from all wheels. The motorcycle is perhaps the most difficult to secure, because of its weight and construction. The wheels are blocked with No. 5 patterns. Four of these patterns are used, one on both sides of each wheel.

When the vehicles are fully secured, the inspecting group tests the job by checking the travelling preparations on each vehicle, the blocks, and the tension of the wire lashing. Its twisting and securing are also inspected.

The entire class then assembles and the whole procedure, particularly the securing, is critiqued by the instructor and students.

The above instruction has shown excellent results in the training of officer candidates and student officers at Camp Hood. Through them, the fundamentals of rail loading and movement have been effectively transmitted to training units.

Figure 4—OCs securing half-track, using patterns 2 and 3 and wire lashing on track. Same patterns are used on front wheels, with No. 2 patterns double height along side of wheel. Spikes not driven home for demonstration.

Photo by Reproductions Dept., TDS

Centralized Training
In the 3d Cavalry (Mecz.)

*by Lieutenant Colonel Meredith C. Engel**

TRAINING of the individual soldier presents a multitude of problems in any branch of the service. But in the mechanized cavalry of today those problems are magnified beyond the comprehension of any but those who have been through the process of solving them. The volume of subjects and the number of weapons that a new soldier just introduced into the mechanized cavalry must master are so great that neither student nor instructor will have any idle time, and the ingenuity of the instructor will often be sorely taxed.

Drive – shoot – communicate are incidental fundamentals to the big job of reconnaissance, but each one is a big job in itself when it must be taught. As basic subjects in the mechanized cavalry, they constitute merely a background for every soldier. "Stables" have not disappeared—only a word has been added. "Motor stables" is quite an appropriate term, and it is surprising what an attachment the soldier can acquire for his mount. And so, to the three big jobs above, a fourth is added; combine groom, water, and feed and you have *maintain*—as essential to the vehicle as to the horse, if performance is expected when the going gets rough.

*3d Cavalry (Mecz).

The instructors at the service schools are honest in their convictions when they each in turn advise that the best men in the outfit must be the radio operators, or the drivers, or the gunners, or the mechanics to keep the vehicles in operation. But when every soldier must be able to do at least two and sometimes all four of these things and do them well, it leaves little room for many at the bottom.

When there is much to be done and little time in which to do it, mistakes are costly. There are ways in which the task can be simplified without risking the set-back of costly errors. The expedient now being used successfully by the 3d Cavalry (Mecz) is the system of *centralized* training.

The three big jobs about which every soldier in mechanized cavalry must have a basic knowledge—*driving, shooting,* and *communications*—are each centralized under the control of an officer who is especially qualified in that particular subject. It is that officer's job to plan, organize, and supervise his subject for the entire regiment.

The *Tables of Organization* provide a regimental motor officer and communications officer, who are

37mm Training on 1000-inch .22 Caliber Range

The Communications Classroom. All furniture and equipment were built by the men.

the logical officers to handle those particular jobs. For centralized training in weapons, a weapons officer must be detailed. All of these officers must have their specialized assistants, of course, and there again the *Tables of Organization* provide almost all that is needed. Each troop has its own motors officer and its communications (or radio) sergeant. Is there any harm in designating one of the troop officers as troop weapons officer, and making him responsible for all weapons instruction within that troop? "But," it is asked, "should not all officers be expert at all weapons and be able efficiently to teach them all?" Yes, and eventually they will, but the army today is being built with young officers, and they are not all efficient in everything at the start. So why not approach one thing at a time and become really proficient at that one thing? Therefore a weapons officer is selected in each troop, and the plans begin to take shape.

With this plan of centralized training, it might be suggested that the troop commanders are being robbed of their initiative. Not at all, they will have ample opportunity to display their initiative and a great deal more time to permit it to function, because the detailed schedule and the worry of procuring equipment will be lifted from their already overburdened shoulders.

Here is how centralized training works in a mechanized cavalry regiment. First, each of the three officers responsible for motors, communications, and weapons training takes his crew of assistants and thoroughly schools them for their job. There are classes for instructors at every opportunity that can be spared during the day, and then again at night, until they are sure that every assistant is qualified in the subject that is to be taught. Then the method that is to be employed is decided upon and understood by everyone. The training program is broken up into lessons. All available equipment in the regiment is pooled, and the troops are staggered in the schedule under control of the Regimental Plans and Training Officer so that maximum utilization of the equipment can be obtained.

Except for communications training, which all personnel attends at the same time, the troops are rotated through a "classroom." All use the same equipment, but each troop studies under its own instructor, who takes over when his troop arrives. The instructor is thoroughly qualified to give the instruction, has the lesson planned and organized and the equipment set up, and yet is not lost to the troop at other times during the day for duty. The layout of equipment for the day is made by the first troop to arrive in the morning and taken in by the last troop to leave in the afternoon. This saves loss of training time for each troop, but to avoid having the same troops accomplish all of the work, the position of troops in the schedule is rotated daily. By keeping a particular phase of training in the same area throughout the day, the problems of supervision by the responsible officer and of inspection by the regimental commander are simplified.

Another big advantage in centralized training is that

Future Radio Operators at Work

the instruction is uniform. In order to make a change or correct errors, it is necessary to see only one officer instead of many. When the regiment is trained, every soldier will manipulate the trigger of the machine gun or clutch the vehicle or handle the radio key in the same way, instead of in as many ways as there are individual instructors. There is only one right way—that is in accordance with the Field Manual—but some units do establish peculiar habits of doing certain things; and when a regiment is organized with officers and noncommissioned officers from several sources, a variance

of methods is often encountered. Inasmuch as a uniform system is not only desirable but imperative, the centralized control can accomplish it. Then, too, all units will be at the same level of training in any one subject at all times.

There are other factors to be considered, minor perhaps compared to the big advantages already discussed, but important enough to be mentioned and examined. Training aids and training facilities are essentials that are often difficult to obtain. If individual troop commanders must spend time gathering by fair means or foul such things as sighting bars, cut-away models, charts, and many other aids so necessary in getting the instruction across, a motley and not too effective array is likely to result. And when it comes to obtaining classrooms outfitted with some kind of furniture, no matter how crude, ranges for firing (with the present congested condition of all army posts), and areas in general for training, the specialist instructor can do much toward getting the best use for the entire regiment out of the facilities available; because centralized training affords absolute coördination through proper grouping and rotation.

Every soldier must be at least familiarized with all individual weapons plus the machine gun, but before one new soldier can be started on his training, there are many things that must be accomplished. A building where indoor instruction can be given in the event of inclement weather is desirable but not essential, but some central place where equipment can be concentrated is necessary. For the rifle alone there must be sighting bars, sighting discs, rifle rests, and boxes of some character, none of which are items of issue.

Numerous small items such as targets, paper, thumb tacks, pencils, waste, score books, score cards, sight blackening materials, and cleaning materials must be provided. Charts and simplified reference material such as pamphlets or mimeographs are helpful. Arms must be cleaned, and ammunition, both dummy and live, must be available when it is needed. All of this equipment must be provided for in advance, and yet rifle training begins in the first week of the MTP! A resourceful officer who knows how to get this equipment, whether it be issue or non-issue, given a few men to work with and that one job to do for the entire regiment, can get the job done. It is being done in the 3d Cavalry (Mecz)! Adequate equipment can be procured and that part of it that must be built can be constructed correctly and sturdily.

There are other subjects of individual training to which this same system can be applied. The pioneer and demolitions personnel, the cooks, the clerks, the buglers and messengers, the motor mechanics, and the armorers for the entire regiment can all be grouped under a specialist instructor for each subject and yet remain under control of their individual troop commanders for basic training.

Assume that the officer and enlisted cadre of a regiment just being activated arrive simultaneously on the date of activation and that the fillers begin to arrive only one week later, all from reception centers. That situation can and has occurred. Will a decentralized system of training be ready to operate under those circumstances? Can each individual troop commander be prepared for the details involved in all phases of training? No! But the *centralized* system of training *will* accomplish these results in the minimum of time and with the minimum of equipment!

Putting Round Pegs in Round Holes

*by 2d Lieutenant Claude D. Baker, Jr.**

THE present process of "classifying" members of the armed forces is intended to aid in placing each individual soldier where he may best utilize his technical specialty in furthering the efficiency of the complex mechanized war machine.

Army regulations state, "Classification is a process by which pertinent data concerning the enlisted man's education, intelligence, aptitudes, previous military experience, civilian work history, interests, hobbies, and other qualifications are validly obtained and correctly recorded to be used as a basis for an assignment in which he will be of the greatest value to the service and will utilize his acquired skills most effectively. It will be borne in mind that classification is not in itself an objective, but rather a means to an end whereby no factor contributing to an enlisted man's value to the service will be overlooked."

In order fully to appreciate the present system of classification, it is necessary to dig into the records of 1917 when men were being recruited for the armed forces of World War I. Little thought was given either to the technical ability of the individual or to the need of a replacement for a specialized position where a technical vacancy might easily occur and be very difficult to fill. Radio men had to be replaced; laboratory technicians were needed; and in general, only archaic methods of replacement existed, because the need of a

*Personnel Officer, 3d Cavalry (Mecz).

system for the placement of men had not been foreseen.

In 1917, after costly tribulations, the War Department realized the need for a classification system, and in July summoned together skilled personnel administrators and psychologists who drew up a system and put it into operation.

In the latter years of World War I, men were being placed in organizations that could use their technical skills to the utmost advantage. This Placement Personnel System at that time adopted the Qualification Card System, with tests similar to those in use today.

Several years after the end of the first World War, the numbers of the personnel in the armed forces diminished to such an extent that there was little need for this personnel placement system, and it passed to a negligible degree of usage. But the wheels of the system were kept oiled, so that the idea might be used if the need ever recurred.

In 1940 the present system as modified was again put into motion. There was no doubt that the armed forces of today were to be highly specialized and technical. Consequently, to place an individual correctly and to realize the greatest profit from his skills, the placement plan had to work. The present forces are largely a collection of technical individuals, teamed together with other technical individuals in such a way as to utilize most efficiently the skills imparted to them.

The 3d Cavalry (Mecz) was activated at Camp Gordon, Ga., with a complement of officers and enlisted men as the basic cadre. The regiment had as its initial problem the task of placing all incoming recruits in their correct category, where, after basic training, they eventually could fulfill the desired job assigned them according to their civilian skills.

The new filler personnel arrived in groups of approximately 200 to 300 men each, and from War Department Qualification Form No. 20 of each group, it was learned among other things that the regiment possessed a large number of 18 to 22 year old soldiers, with a major percentage showing a score of 110 or above on their Army General Classification Test. There were only 3 illiterate men within the entire regiment.

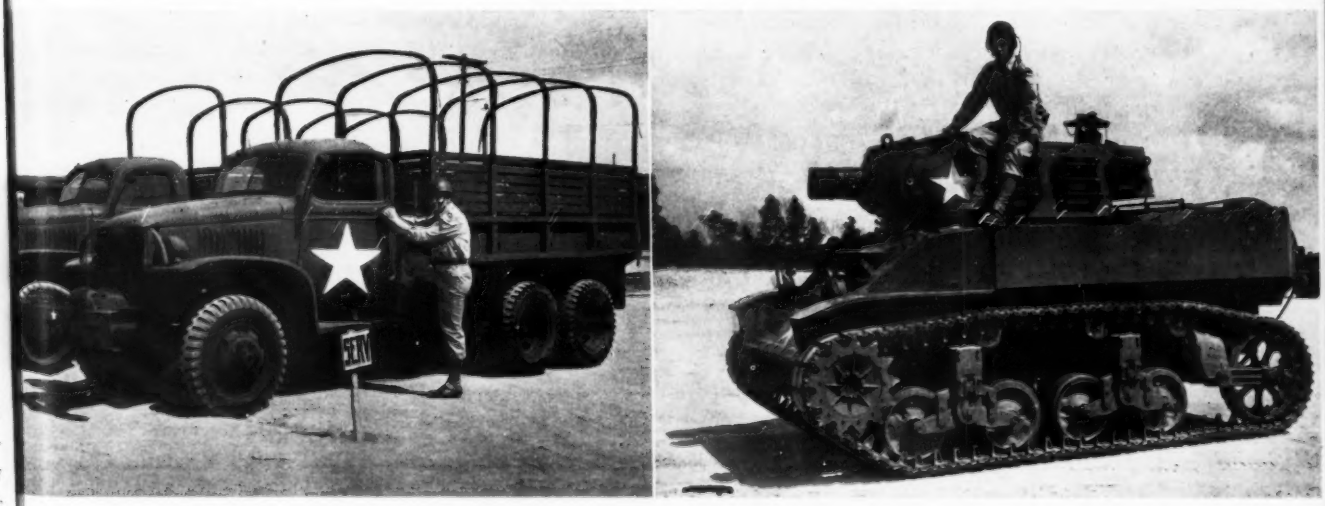
While the enlisted men were being put through a medical examination, the Personnel Section began the task of classifying and sorting the men into the technical vacancies of each troop. In order that each troop could be given the men that it required, each troop clerk from the cadre was supplied with a list of Table of Organization *job specialties* that existed within the troop.

After necessary preliminaries, the men were then equally distributed within each troop according to each man's *occupational specialties* as justified by T/O requirements and the Army General Classification Test score.

The theory of the entire procedure was to put the right civilian cog in the right military sequel in order to avoid future congestion and further transfer of enlisted men within the regiment. This system reduced administrative procedure to a minimum.

The determined effort of the 3d Cavalry to assign men to each troop equally according to classification test scores was intended to balance each troop in intelligence so that training programs would be balanced. If men had not been assigned equally, certain troops would have advanced further in training than other troops hastily thrown together without thought of equalization.

Troop commanders are now using the Qualification Card every day prior to assigning an enlisted man to any new position. The card system is working with the utmost satisfaction, and it is felt that thorough classification and the usage of the system has been and will continue to be a contributing factor in the final combat efficiency of any unit.



Large men for trucks . . . Small men for tanks

Training the Brigade Reconnaissance Platoon

*by Captain James B. Scott, Cavalry**

WITH the advent of World War II, additional emphasis has been placed upon the already salient battle commandment—"reconnaissance." Adequate, accurate, and complete reconnaissance is now a "must" for every unit commander preparing for a campaign.

Needless to say, the most important reason for placing emphasis upon continuous and effective reconnaissance lies in the present trend of warfare, which has changed from the more or less static position battles of 1914-1918, to the development of a swift mobile offensive striving by its mobility to penetrate the enemy's weak points.

The general information required by commanders of large units when formulating their initial plans is furnished by distant reconnaissance. This information is usually obtained by the use of aircraft, which because of their speed can supply the commander with information of the enemy's main forces, bivouac, supplies, and the location of his reserves, before contact is made between the most advanced elements of the two combatant units.

As actual combat becomes imminent and the forces are within striking distance, specific information becomes a prime factor in the formulation of the unit commander's final decision and plans. This necessitates the initiation of close reconnaissance, which furnishes the commander with the desired information regarding terrain and capabilities of the enemy. Close reconnaissance then takes on a continuous aspect, and only by that means is it possible for a commander to stay well informed on the rapidly and constantly changing situation.

Reconnaissance is performed by integral parts of the cavalry brigade, such as the reconnaissance platoon, mounted, and dismounted patrols.

1. The *motorized reconnaissance platoons* are employed at the farthest distance from Brigade Command Post until actual contact is established. The operation of these platoons is outside the radius of the operation of the mounted patrols. When actual contact is established, the mounted and dismounted patrols then take over the duties of close-in reconnaissance and leave the motorized units free to capitalize on their speed and mobility to seek out weaknesses on enemy flanks and reconnoiter to his rear.

2. Once motor reconnaissance has established contact, it works back to the radius covered by mounted patrols. The duties of the *mounted patrols* then become infinitely greater, and upon them falls the burden of furnishing a larger portion of the information needed by the brigade commander.

3. *Dismounted patrols,* of course, work when information is desired concerning enemy installations and positions where the distance between hostile forces is not in excess of 5 miles.

Primarily, there are two basic elements of information needed by a commander preparatory to issuing his orders. The first is *terrain information;* and the second is *enemy information.* Having a mission assigned by the division commander, the brigade commander knows what information he needs and covers this in his reconnaissance orders. Essential items concerning terrain are the availability of road nets, possibility of cross-country movement both for himself and the enemy, condition of bridges along the expected route, terrain features particularly adaptable for defense by himself or enemy troops, any terrain obstacles which might influence the brigade commander's decision, and the suitability of terrain for use by tanks or antitank units.

The plans and intentions of the enemy are always problematical. Consequently, the desired information concerning him covers a vast field, and varied and conflicting reports can be expected. The essential elements regarding the enemy are his location and strength, his troop dispositions, location of his reserve, position of his flanks, possible strong points or weaknesses, availability of reinforcements, and the type of weapons with which he is armed.

The unit that performs much of the reconnaissance work for the brigade, is the comparatively new reconnaissance platoon provided in the Tables of Organization for Cavalry Brigade Headquarters Troop.

Since a dead or captured reconnaissance element is useless, it is essential that combat be avoided except as a last resort or to prevent capture. Under unusual circumstances, however, in order to gain necessary information or take prisoners, it may be necessary for elements of the platoon to engage in actual conflict. Under such conditions, the fire power of the unit is such that, considering the element of surprise and mobility, the platoon or section of the platoon should be able to overwhelm a force equal or even superior to its own. This reluctance to commit the platoon to actual fire should

*Hq. 2d Cavalry Brigade.

not in any way detract from the aggressiveness of the unit.

In regard to large fire power, the German reconnaissance units are organized similarly and when necessary do engage in battle. Quote: "Motorized reconnaissance is well in front *when there is need to supplement air reconnaissance quickly,* and *when a clear picture of the enemy dispositions can be obtained only by fighting.* The reconnaissance unit is fitted for this because it is equipped with armored vehicles and *numerous automatic weapons to carry out reconnaissance in battle.* Against a strong enemy it must be reinforced."

The selection of personnel for the reconnaissance platoon should be given strict and conscientious attention. From the platoon leader down to the basic privates, the personnel should be hand-picked. Each man should be mentally and physically alert, aggressive, cooperative, and should have a high degree of initiative.

After the men for this unit have been selected, then begins the work of welding them into a solid and smoothly functioning organization. The entire unit should be brought along together in their schooling, and this schooling should follow the maxim—*"explanation, demonstration, application* and *examination."*

Consistently better results can be obtained by having the men actually do the work than by simply explaining it to them. Trial and error, with a constant check and correction, is the most satisfactory manner through which to gain information and retain it for future use.

In the conduct of a school for this unit, consideration should be given to the type of work that will be required of the platoon. Essentially, their's is one of the most rigorous aspects of battle, requiring of them stamina, endurance, and patience. They must be able to gain information of the enemy, interpret and evaluate it, and disseminate that which is essential to the brigade commander. They must conceal information of their own forces and then be able literally to "read between the lines" so far as the enemy is concerned.

During the *first phase* of instruction, all reconnaissance personnel should be familiar with the organization of our army, with emphasis placed upon the particular branch of the service involved—in this case the cavalry. In later phases of training, a review of this field in connection with work on the organization of enemy units is desirable.

With this perspective, the purpose and functions of the reconnaissance platoon should be considered. While the field is quite general, benefits of this orientation lecture are far reaching.

The *second phase* should be devoted to the specific designation of the duties of the personnel in the unit and familiarization with such terms as scouts, patrols and observers, as well as the duties of each. As the instruction proceeds, such terms as outposts, observation posts, command posts, main line of resistance and strong points should be explained. In this connection, it is beneficial to follow the explanation by laying these things out on the ground, at reduced distances.

In the *third phase* study is devoted to the work of the reconnaissance element and the collection and transmission of information. It is possible at this time to work into a preliminary reconnaissance problem, such as laying out a particular enemy situation and then following the procedure necessary to get this information back to the command post. At this time, it is very helpful to use men or prearranged flag codes to indicate enemy patrols, command posts, outposts, main bodies, covering forces, reserves, truck columns and supplies. Additional incentive can be furnished by breaking the platoon into squads or sections and allowing them to compete with each other.

Having been on the terrain, in the *fourth phase* the unit can be introduced to map and aerial photographs. If available, maps of familiar terrain should be used, as features with which the men are already familiar help them in picturing the terrain on the map. Since in all probability, under actual war conditions, aerial photographs will be the main source of information, emphasis during this phase should be placed upon photographs. The use of the compass becomes increasingly important, and preliminary work can be used to supplement the map reading subject.

The *fifth phase* covers instruction in sketching. Little explanation should be necessary regarding the background and foundation of map reading and conventional signs. Basically, the work is simple, but considerable time must be spent in actually working on the terrain. The use of the compass is essential, and by painstaking and diligent work a successful criteria of previous work can be gained by the finished sketch. At the conclusion of this phase an apt student should have confidence in his ability and the use of his tools.

The final step in this phase should be consideration of overlays and a situation map. Every individual must understand the importance of, and have the ability to make an accurate overlay. A cleverly made overlay will usually demonstrate the situation more clearly and graphically than any verbal or written message. The men must be taught, however, that they must clearly remember what they see in order that they may clarify any situation when additional information is requested.

Having been taught to observe and remember what they observe, in the *sixth phase* the men learn to evaluate their information. This must be "sifted out" until only that which is essential is transmitted to higher headquarters. Many items may be of an informative and interesting nature, but unless they have a direct bearing upon the situation they should not be reported. Accurate evaluation of information requires a great deal of time and work. Instruction here can be simplified by setting up a system of flags, as suggested in the *third phase.*

The conclusion of this phase should be devoted to message writing and the method of transmission of messages. Both verbal and written messages should be clear, concise and adequate, and until a degree of per

fection is achieved, verbal messages should be written out before being transmitted.

The *seventh phase* requires considerable preparation and work. Since the majority of information is transmitted *via* radio, it is essential that all persons in the unit understand the fundamental operation of the set. The goal should be for each person, or at least for each squad leader, to be able to send or receive 6 to 10 words per minute. Further, a basic understanding of map coordinate codes, pyrotechnics, panel codes, field telephones and cipher devices should be required. This is perhaps the most interesting but most difficult of all the work required in this course of study.

During the *eighth phase,* the men study the problems involved in examination of enemy personnel and the action to be taken in regard to them. Other men simulating enemy captives are first coached in what they are to say, then actually examined by members of the platoon, and the results recorded. Thus again, actual work is the basis for a successful completion of the phase.

The comparatively short *ninth phase* is devoted to the use of camouflage and concealment. The practicable aspect of camouflaging vehicles, weapons and personnel can be gained by using only the material at hand. If possible, aerial photographs of the resulting camouflage should be taken and used to demonstrate defects in the work.

The *tenth phase* is both technical and comprehensive. It deals with the identification of friendly and enemy aircraft, tanks and uniforms. The use of training films and other visual aids increase the interest of the work. If located near any army airport, friendly craft can easily be identified by actually watching them in flight and pointing out their characteristics.

At the completion of the course the success of the instruction can be determined from the results obtained from the *final phase*. The entire platoon should be run through a 36 to 48 hour reconnaissance course involving the necessity of making practicable use of all their previous instruction. If thought is given to laying out the course, all of the eventualities of combat, as well as the instruction covered, can be simulated. If a good foundation has been laid in previous phases, the result should be gratifying.

This outline covers only the essentials in the training of a reconnaissance unit. It can be compared to the bone structure of the human body. To put flesh upon this skeleton frâmework, it is necessary to have the judicious and patient work of an instructor and men desirous of developing a capable, well coördinated and adept reconnaissance platoon.

107th Cavalry Reconnaissance Regiment (Mecz.)

From a painting by Howard E. Smith.

Book Reviews

DEFENSE. By Field Marshal Ritter Wilhelm von Leeb. (Translated from the German). Military Service. $1.00.

In *Defense,* published in Berlin in 1938, von Leeb offered his government a plan for the next war in which Germany might be engaged. He recommended that the war be opened with active defense, as a preparation for the offensive later. Von Leeb's plan, as outlined in *Defense,* was rejected by Hitler; but the same idea of active defense, developed simultaneously in Moscow, was successfully employed by the Russian army in its fight against the Germans in 1941.

This is the second book in the series of which Clausewitz' *Principles of Warfare* is the first. Those who found the first book of value will be equally as interested in this one.

* * *

SURPRISE. By General Waldemar Erfurth. (Translated from the German) Military Service. $1.00.

Erfurth contributes to modern military literature the first treatise on surprise as one of the fundamental elements of victory in warfare. He was head of the German Military Commission to Finland in 1943, and previously chief of G-8, of the German General Staff, responsible for "basic planning."

In measuring the value of *Surprise,* it should be remembered that it was written prior to World War II, and that in it, Erfurth departs from the lines of traditional military thinking. The deduction to be drawn from his book is that the strategy of surprise is "nothing but an application of the principle of the economy of force."

In the opinion of the translators, General Erfurth underestimates the value of the surprise to be had in the use of new weapons and fighting techniques.

This is the third book in the series of which Clausewitz' *Principles of Warfare* is the first, and von Leeb's *Defense* is the second.

* * *

THIRTY SECONDS OVER TOKYO. By Captain Ted W. Lawson. Random House. $2.00.

Captain Lawson, with the editorial assistance of Robert Considine, has given us a thrilling first-hand account of the raid of American planes over Tokyo.

Starting with the very beginning, Captain Lawson describes the selection of the men, the skilful planning, and the rigid training that went into the preliminary stage—all of which helped to cut the losses that might have occurred on such a dangerous mission. The Navy is given full credit for its magnificent work in getting the flyers as close to their target as safety and circumstance permitted.

These months of training were not only for "thirty seconds over Tokyo" but for developing the men to sustain themselves for whatever might come after. Plenty did. Only men in perfect physical condition, with one hundred per cent of their wits about them, could have survived what they went through after they landed in China. Given these attributes, they still would have had little chance had it not been for the courageous assistance given them by the Chinese and the Missionaries into whose hands this crew was fortunate enough to fall.

Not the least important phase of this book is the ending —Captain Lawson's summary of the attitude of these men, in the light of subsequent events, toward the mission for which they had volunteered.

* * *

COMBINED OPERATIONS. The Official Story of the Commandos. By Hilary St. George Saunders. Macmillan Company. $2.00.

Stranger and more thrilling than any fiction is this absorbing account of the accomplishments of the picked men from the Royal Navy, the British Army, and the Royal Air Force, who work with U. S. Rangers and other Allied men in what is known as Combined Operations.

Mr. Saunders has written a simple and direct account of the training and exploits of these men. Without giving out information that would aid the enemy, he retains for the reader the sense of being on the inside track.

* * *

BRIDGEHEAD TO VICTORY. By L. V. Randall. Doubleday, Doran and Company. $2.00.

Written primarily for the layman, this book presents a general picture of invasion possibilities that, like all such analyses, must wait for history to evaluate.

The author bases his deductions on his familiarity with the geography and peoples of Europe and his knowledge of military tactics, acquired during five years service in the German army prior to and during the last war.

As Mr. Randall states in his preface, he may be very wrong. Apparently, he has offered an honest opinion and pretended to no more. As a whole, his analyses, deductions and conclusions regarding invasion routes seem to be more logical than the average.

Mr. Randall pointed out (prior to the fall of Tripoli) that of all the Axis satellites, Italy is most possible for invasion via Sicily. He suggests further that this invasion should be followed quickly with simultaneous attacks by the Red Army in the east and the establishment of bridgeheads along the European coast in the west.

While advocating the intensive use of airborne paratroops, the author observes that the only successful large-scale action of this kind to date was employed by the Axis at Crete.

As a sketch by which to follow future events, this book is of general interest.

Principles Of War

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THE WAACS. By Nancy Shea. Harper & Brothers. $2.50.

Once again Mrs. Shea has come to the fore with an authoritative guidebook for women. Her *Army Wife* and *Navy Wife* were two of the most helpful books published for wives of men in the service. She now turns her attention to the women in the service.

The Waacs gives a brief history of the organization and the principal people who influenced its inception. It contains a thorough outline of the requirements for enlistment, a comprehensive account of the training given in each branch of the service, and a picture of what the Waacs are doing in the various fields.

This book will be an invaluable guide to women considering enlistment in the service. It will also be of interest to the families of Waacs, because it will give them a clear idea of what is being done by these women.

✓ ✓ ✓

THE ORDEAL OF SERGEANT SMOOT. By Louis Paul. Crown Publishers. $2.00.

A number of books giving the reactions of draftees to the army have been published. This is a portrayal of the army's reaction to the draftee, as presented by Sergeant Smoot. It should have a salutory effect on the draftee, provide the sergeant with some amusing moments in retrospect, and entertain the rest of the world by providing some much needed laughter.

✓ ✓ ✓

THE SPY IN AMERICA. By George S. Bryan. J. B. Lippincott Company. $3.00.

WHAT YOU SHOULD KNOW ABOUT SPIES AND SABOTEURS. By Will Irwin and Thomas M. Johnson. W. W. Norton Company. $2.50.

The history and practice of espionage, especially during wartime, is of absorbing interest to most readers. These two books are excellent contributions to the collection of books on the subject.

The Spy In America is the first book to give a more or less complete history of the subject from the American Revolution to the First World War.

What You Should Know About Spies and Saboteurs is concerned more with the practice of spies and saboteurs than with their history. It does, however, give many concrete examples to illustrate the methods described. It is one of the most valuable of the "what-you-should-know" books.

✓ ✓ ✓

THE UNION OF SOUTH AFRICA. By Lewis Sowden. Doubleday, Doran and Company. $3.00.

Lewis Sowden, a South African editor, endeavors to explain the paradox of the South African Union—an unstable union of a divided people—and the puzzle of its relationship to the British Empire and to the world at war.

While giving enough historical background to make South Africa's inner conflicts understandable, Mr. Sowden centers his attention on its recent past, its present, and, perhaps most important, the question of its future.

THE ARABS. By Philip K. Hitti. Princeton University Press. $2.00.

This fascinating little book is a perfect introduction to a civilization that considerably ante-dates our own. It is a drastic and skilful condensation of Dr. Hitti's monumental *History of the Arabs* published six years ago.

The author covers the geographical, ethnological and religious factors that produced the Arab civilization. He then carries the reader through the period of ignorance prior to the birth of Mohammed, the conquests of the Arabs, and the ultimate fall of their empire which was greater than Rome's at its zenith.

This enlightening little volume should be of interest to all readers who wish to know more of the people who live at the crossroads of the world. It is to be regretted that it cannot be mailed out of the country at this time.

* * *

MOTHER RUSSIA. By Maurice Hindus. Doubleday, Doran and Company. $3.50.

One of the great contributing factors to the value of Maurice Hindus' writings is his own life. His early years were spent in Czarist Russia, his adolescence and early manhood in this country, and his mature years in the world at large. *Humanity Uprooted* and *Red Bread* were two of the first really comprehensive books on Soviet Russia to be published in this country. Hindus presented, as few other authors did, a clear, unprejudiced view of the problems that Russia faced and pointed out the good and the evil that might result from the policies being pursued.

Mother Russia is, after a fashion, a sequel to these earlier books. It is a magnificent picture of a nation awakening to a sense of nationalism, rediscovering its own past, and seeing new visions ahead.

The book begins with three stories of young Russian heroes—two girls and a boy. It is unfortunate that these stories are written in the manner of the propagandist; but after recounting these specific examples of what youth is doing, the author reverts to his usual excellent style and presents an interesting and comprehensive narrative of what is happening throughout the Soviet.

Mr. Hindus' deep knowledge of his subject, inherited and acquired, makes itself felt throughout the book.

* * *

PRISONER OF THE JAPS. By Gwen Dew. Alfred A. Knopf. $3.00.

Gwen Dew, only American woman correspondent in the Far East when the Japanese attacked, has written a graphic and valuable picture of her experiences during the siege of Hong Kong and in the prison camp where she was held until her return on the *Gripsholm* in 1942. She describes forcefully and well, not only the incidents of the war, but the sadistic brutality of the Japanese soldiers as a whole. She is not blind, however, to the fact that a few Japanese, principally newspaper men, tried to atone for the uncivilized attitude of the majority of their countrymen.

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MEN IN MOTION. By Henry J. Taylor. Doubleday, Doran and Company. $3.00.

This book should prove of interest to a majority of thinking people. The more conservative group will find satisfaction in a great part of it. The liberals will find a little with which to agree and much about which to argue.

As a raconteur, Mr. Taylor is extremely interesting. His chapter on what happened when the Allies landed in Africa is particularly engaging as it is the first "hind-sight" view that has been presented. His travels took him from the Middle East to Egypt, Syria, Palestine and Turkey.

It is when he ceases to be a reporter and becomes a philosopher in the field of modern social trends that Mr. Taylor exhibits a marked weakness, to the point of ignoring many facts. His book, however, is good reading, whether you agree with his point of view or not.

* * *

BUT SOLDIERS WONDERED WHY. By Frank Gervasi. Doubleday, Doran and Company. $2.75.

This colorful book sweeps the reader through the vibrant political aspects of the South American scene—the influences of "sky trucks," politics and the war in Brazil, Argentina and Chile; then jumps (as did the author) to Libya, Cairo, Tobruk, the exchange ships, *Asama Maru* and *Gripsholm;* and concludes with comments on Willkie, Madagascar, South Africa, and the U. S. State Department. It is an account of one reporter's reactions to present world conditions as seen along the route of his assignments. The personalities of prominent men are drawn in swift strokes, interesting, but too vehemently partisan to be convincing. The author is sincere, but in books bearing on political and social subjects an impersonal view produces a more informative volume.

* * *

ENGLAND'S ROAD TO SOCIAL SECURITY. By Karl de Schweinitz. University of Pennsylvania Press. $3.00.

Social security will be one of the problems that we shall have to face in the postwar world. For that reason this book is of considerable interest. It is an account of England's social security endeavors and progress over a period of six hundred years from the Statute of Laborers in 1349 to the Beveridge Report in 1942. While England's problems may not be identical with our own, her experience can certainly be of value in our study of the needs of mankind in the struggle for security.

* * *

ON YOUR OWN. By S. A. Graham and E. C. O'Roke. University of Minnesota Press. $2.00.

This is an excellent manual for field and service men on how to care for themselves in wild country. There are chapters on the treatment and prevention of poisoning and infections, quicksands, quagmires, temperature extremes, parasites, and other problems confronted in primitive environments.

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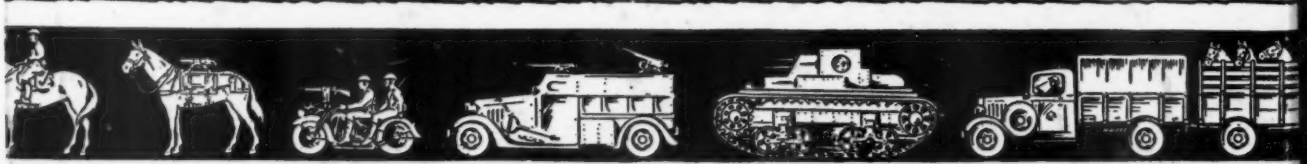
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